FE298

Diagram No. 8252-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey ... Field Examination

Field No. ... RA-5-1-87

Registery No. ... FE-298

LOCALITY

State ... Alaska

General Locality ... Sitka

Sublocality ... Sitka Harbor and Sawmill Cove

19 87

CHIEF OF PARTY
CAPT C.W. Fisher

LIBRARY & ARCHIVES

DATE ... May 24, 1988

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

FE298

NOAA FORM 77-28 (11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTER NO.

FE-298

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

RA 5-1-87

State Alaska

General locality Sitka

Locality Sitka Harbor and Sawmill Cove

Scale 1:5,000 Date of survey May 7 - May 26, 1987

Instructions dated August 5, 1986 Project No. OPR-0912-RA-87

Vessel RAINIER S221 (2120); Launches 2123, 2125, 2126

Chief of party Carl W. Fisher, CAPT, NOAA

Surveyed by LT White, ENS Damm, ENS Poston, ENS O'Mara, ENS Hill, ENS Meis, ENS Larsen

Soundings taken by echo sounder, ~~hand lead, pole~~ DSF-6000N

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Verification by ~~Protracted by~~ J. Stringham, I. Almacen Automated plot by PMC Xynetics Plotter

Evaluation by ~~Verification by~~ I. Almacen

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and tenths of fathoms

REMARKS: Revisions and marginal notes in black generated during office processing. Separates are filed with the hydrographic data.

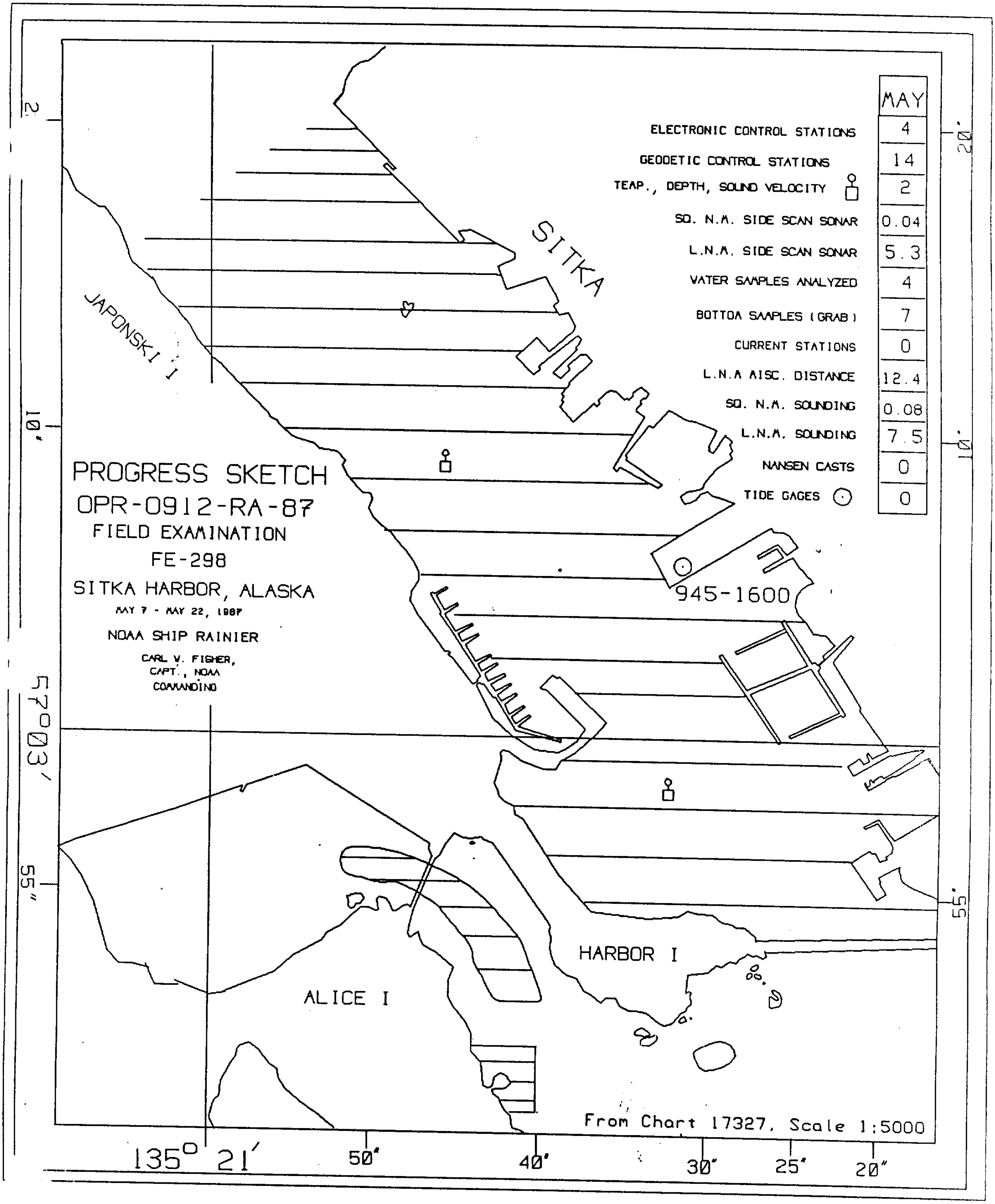
Standards ckd 7-13-88
C.Lay

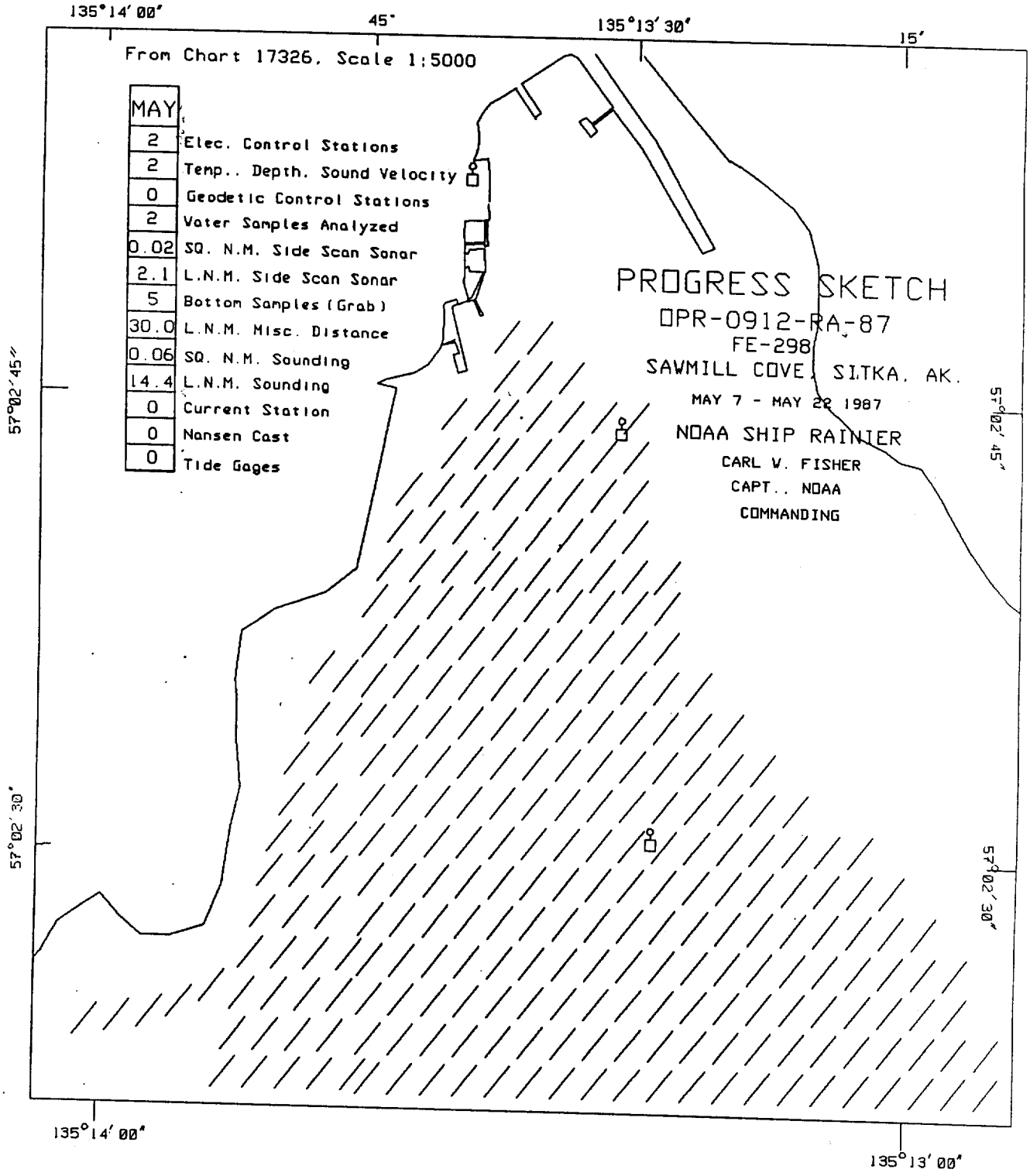
AWOIS & SURF 9/21/88 mcR

Cht. 17327

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174


PROGRESS SKETCH
OPR-0912-RA-87
FIELD EXAMINATION
FE-298
SITKA HARBOR, ALASKA
MAY 7 - MAY 22, 1987
NOAA SHIP RAINIER
CARL V. FISHER,
CAPT., NOAA
COMMANDING
MAY
ELECTRONIC CONTROL STATIONS 4
GEODETIC CONTROL STATIONS 14
TEMP., DEPTH, SOUND VELOCITY 2
SQ. N.M. SIDE SCAN SONAR 0.04
L.N.M. SIDE SCAN SONAR 5.3
WATER SAMPLES ANALYZED 4
BOTTOM SAMPLES (GRAB) 7
CURRENT STATIONS 0
L.N.M MISC. DISTANCE 12.4
SQ. N.M. SOUNDING 0.08
L.N.M. SOUNDING 7.5
NANSEN CASTS 0
TIDE GAGES 0
SITKA
JAPONSKI I
945-1600
HARBOR I
ALICE I
From Chart 17327, Scale 1:5000
57°03′
20″
10″
55″
135° 21′
50″
40″
30″
25″
20″


135°14′00″
45″
135°13′30″
15″
From Chart 17326, Scale 1:5000
MAY
2 Elec. Control Stations
2 Temp.. Depth. Sound Velocity
0 Geodetic Control Stations
2 Water Samples Analyzed
0.02 SQ. N.M. Side Scan Sonar
2.1 L.N.M. Side Scan Sonar
5 Bottom Samples (Grab)
30.0 L.N.M. Misc. Distance
0.06 SQ. N.M. Sounding
14.4 L.N.M. Sounding
0 Current Station
0 Nansen Cast
0 Tide Gages
PROGRESS SKETCH
OPR-0912-RA-87
FE-298
SAWMILL COVE, SITKA, AK.
MAY 7 - MAY 22 1987
NOAA SHIP RAINIER
CARL W. FISHER
CAPT., NOAA
COMMANDING
57°02′45″
57°02′30″
135°14′00″
135°13′00″

A. PROJECT

A field examination, designated FE-298, was completed in accordance with project instructions OPR-0912-FA-86, dated August 5, 1986, and the following changes:

Change	Date	Title
1	August 12, 1986	Change No. 1 S-0912-FA-86
2	September 5, 1986	Change No. 2 S-0912-FA-86
3	September 17, 1986	Change No. 3 S-0912-FA-86
4	February 12, 1987	Change No. 4 OPR-0912-RA-87
5	April 14, 1987	Change No. 5 OPR-0912-RA-87

The purpose of this survey was to investigate various charted items in Sitka Harbor and Sawmill Cove in order to update NOS charts 17326 and 17327.

B. AREA SURVEYED

Three main areas were investigated: Sitka Harbor, Sawmill Cove and the entrance to ~~Japonski Island~~ Sealing Cove marina. In addition, the charted submerged ruins off of Castle Hill Rock and Crescent Bay Marina southeast of Sitka Harbor were investigated.

Sitka Harbor trends northwest-southeast, connecting with the Western Anchorage to the northwest and with the Eastern Anchorage to the southeast. The harbor is approximately 300 meters wide with near-shore depths ranging from 0.0 to 3.5 fathoms along the west shore and 2.9 to 5.8 fathoms along the east shore. Mid-channel depths range from 4.8 to 7.0 fathoms. A shallow shelf exists in the northeast area of the channel in the vicinity of Harbor Rock with depths ranging from 0.0 to 2.3 fathoms. The western shore borders an abandoned airfield and is characterized by large boulders and rip-rap. The eastern shore includes several marinas as well as commercial fishing piers and two fuel piers.

Sawmill Cove is located approximately 6 miles east of Sitka and is characterized by nearshore depths of 3 fathoms which drop off rapidly to 33 fathoms in the center of and on the approach to the cove. Shoreline surrounding the cove is steeply dipping rock outcrop. At the northern head of the cove is a lumber mill with shipping piers and docks that lie along the west shore and fill the northern end of the cove.

The entrance to ~~Japonski Island~~ Sealing Cove marina is approximately 110 meters wide with depths ranging from 1.2 fathoms to 2.2 fathoms. Shoreline along the entrance consists of rocks and large boulders.

Data acquisition was conducted from May 7 (DN 127) to May 26 (DN 146), 1987.

C. SOUNDING VESSELS

Data were acquired using three of the RAINIER's automated survey launches.

Vessel	EDP Number
RA-3	2123
RA-5	2125
RA-6	2126

No unusual sounding vessel configurations were utilized, nor were any major problems encountered.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The automated survey launches used for this survey were equipped with Raytheon DSF-6000N echo sounders. The echo sounders were operated in the HIGH + LOW (HIGH DIGITIZED) function, using manual gain controls on both high and low frequencies to obtain the best analog trace. Soundings were recorded in fathoms and tenths of fathoms. Two-fathom bar checks were conducted and recorded daily, using both the LOW and the HIGH + LOW (HIGH DIGITIZED) functions, in accordance with the Provisional Instructions "RAYTHEON DSF-6000N ECHO-SOUNDER OPERATING AND PROCESSING INSTRUCTIONS," dated July 5, 1983, and the N/CG2 memorandum "DSF-6000N Depth Errors as a Function of Receiver Gain," dated May 23, 1986. The following is a list of echo sounders used:

Raytheon DSF-6000N Echo Sounders

Vessel	Serial Number	Day Numbers
2123	A117N	129-142
2125	A103N	129-142
2126	A119N	129-142

A Klein side scan unit was used to investigate AWOIS items and search for hazardous obstructions in the Sitka Harbor area. In the Sawmill Cove portion of the survey the side scan unit was used only to search for hazardous obstructions. The unit was operated in accordance with the Provisional Side Scan Sonar Manual, dated April 25, 1986, and proved to be very effective in locating items of interest within the survey area.

Klein Side Scan System

Equipment	Model	Serial No.
Recorder	521T	254
Transducer	422XS-101AF	410M

Least depths were obtained by divers with a 3D Instruments pneumatic depth gage (S/N 8504192N). The gage was operated in accordance with Hydrographic Survey Guideline #55, and was last calibrated December 19, 1986 by 3D Instruments, Inc. (Appendix IV).

CORRECTIONS TO ECHO SOUNDINGS

Corrections to all soundings were determined for draft, velocity of sound through water, settlement and squat, and tides. These correctors are eventually to be applied to all survey vessels and all areas of this survey. However, in plotting the final field sheet, the determined correctors were applied for draft and velocity only. Settlement and squat correctors were not applied, but the data are included in Appendix IV of this report. Predicted tide correctors were used in lieu of field-determined correctors, and the field tide records have been forwarded to N/OMA121, as per Hydrographic Survey Guideline #50 and the PMC OPORDER. Sea surface conditions did not warrant use of heave correctors. Variations in the instrument initial, stylus arm length, and belt tension are not present with the DSF-6000N.

DRAFT

Transducer depths of 0.3 fathom were measured for all four launches on March 26, 1987 by divers using a large wooden T-square. The draft measurements were made at PMC with the fuel tanks all between full and half full, and with zero, then four, people aboard, and the average computed (Appendix IV). The transducer depths of 0.3 fathom agree with RAINIER historical records. Transducers are mounted starboard, midships, in a location such that all sounding corrections apply to both the low- and high-frequency echo-sounder signals.

VELOCITY CORRECTORS

Velocity of sound through water and the associated corrections to echo soundings were determined by velocity probe casts using a Plessy/Grundy Sound Velocity Sensor (S/N 3444) coupled to a Hewlett-Packard 5315A Universal Frequency Counter (S/N 1946A03637). The Plessy/Grundy velocity sensor was last calibrated in February 1987 at the Northwest Regional Calibration Center, Bellevue, Washington. ~~(Appendix IV)~~.

A velocity cast was performed in the Sitka Harbor area on day 133. A second cast was taken in the Sitka Harbor area on day 141 in order to more precisely determine the depth at which to apply a velocity corrector. A mean of the two casts was computed and showed that velocity correctors are 0.1 fm for all soundings deeper than 6.0 fm in the Sitka Harbor area of the survey. Thus, velocity tape #1, showing 0.1 fm correctors at all depths deeper than 6.0 fm, was used on the final smooth plot. ~~(Appendix IV)~~.

Velocity Cast Locations for Sitka Harbor

Cast No.	Deepest Depth (m)	Day Number	Geographic Position
1	10	133	57°03.1'N, 135°20.7'W
2	18	141	57°03.0'N, 135°20.5'W

Two velocity casts were performed on DN 135 in Sawmill Cove. Cast #1 was in the deep water on the outer fringe of the survey area, and cast #2 was taken near the mill. Results of both casts showed that, in Sawmill Cove, velocity correctors are 0.1 fm for all soundings deeper than 7.0 fm, and 0.2 fm for all soundings deeper than 20.6 fm. Thus, velocity tape #2, as listed in Appendix IV, was used on the final smooth plot for all Sawmill Cove data.

Velocity Cast Locations for Sitka Harbor

Cast No.	Deepest Depth (m)	Day Number	Geographic Position
1	55	135	57°02.5'N, 135°13.5'W
2	20	135	57°02.7'N, 135°13.6'W

The Plessy-HP configuration provides data only at discreet, preselected depths, rather than continuously throughout the water column. Therefore, the method used to compute velocity correctors is similar to that outlined in the

Hydrographic Manual Fourth Edition as Example 2 on page 4-77, except that more data points were necessary in the shallow water in order to define the velocity profile. ~~(Appendix IV)~~.

As a system check of the Plessy probe, surface water samples were obtained at the times and locations of the velocity casts. The surface samples showed acceptable agreement with the probe velocities. ~~(Appendix IV)~~.

SETTLEMENT AND SQUAT

Settlement and squat correctors were determined for the automated survey launches in Seymour Canal, Alaska, on April 28 and May 5, 1987, over hard bottom in a depth well exceeding seven times the vessels' drafts. Both sea and wind were calm. Observations were made through a Zeiss Ni2 leveling instrument (S/N 87102) to a rod held vertically on deck of each launch, almost directly over the transducer. Five level readings were made at each speed tested, and the average taken, to compute the correctors. Tide staff readings were taken concurrently with each set of level readings, and all tide height differences were normalized to the tide height of the dead-in-the-water level readings before the correctors were computed.

Soundings on the final field sheet are not corrected for settlement and squat, although corrections of 0.1 fathom must be made for certain vessels at some RPMs. A TC/TI tape for each automated sounding vessel has been prepared and submitted with this survey. Records of settlement and squat data are included ~~in Appendix IV~~ with the survey data.

TIDE CORRECTORS

The final field sheet is plotted using predicted tide correctors provided by the daily predictions for Sitka, Alaska, station number 945-1600, (reference #1701) in Tide Tables 1987 - West Coast of North and South America including the Hawaiian Islands. Field tide records have been submitted (see Field Tide Note) ~~in Appendix II~~ and a request for approved tides made. ~~(Appendix XI)~~.

E. HYDROGRAPHIC SHEETS

Survey data are plotted on two 1:5000-scale sheets designated RA-5-1A-87 (Sitka Harbor) and RA-5-1B-87 (Sawmill Cove). In addition, two 1:2500-scale sheets were prepared to show all side scan sonar information and all NSP soundings. These sheets were prepared aboard the RAINIER using a Houston Instrument Complot DP-3 roll plotter with the PDP-8/e Hydroplot System and program RK201, "Grid, Signal, Lattice plot. This system draws a modified

See EVAL RPT sec. I

transverse mercator projection. The central meridian, false easting and controlling latitude are constant for each sheet.

The congestion in upper Sawmill Cove (see Section H, SHORELINE) and the fact that the approach to the heavily used pulp dock on the western shore is not portrayed on the current 1:5000-scale chart inset necessitated the expansion of field sheet RA-5-1B-87 to the south of the area assigned in project instructions.

All field records will be sent to the Pacific Marine Center for verification and smooth plotting.

F. HORIZONTAL POSITION CONTROL

Sixteen horizontal control stations were used while conducting this survey. All stations are positioned to third order, class I accuracy or better. Eleven stations were previously monumented and adjusted geographic positions were provided by NGS.

Signal No.	Station Name	Year
100	ALEUT	1938
114	BUCKO	1946
108	CHAN	1938
109	CURVE	1946
111	DOCK	1946
104	GRIFF	1938
200	JAPONSKI IS BR NW TWR	1975
201	LIBRA	1946
101	LOVE	1938
113	PLUTO	1946
106	UNION	1938

Two stations were established by the NOAA Ship DAVIDSON in 1977. Adjusted field positions were provided by NGS.

Signal No.	Station Name
102	BARANOF
107	TLINGIT

BARANOF was repositioned during this survey. Adequate check angle closure could not be obtained with the 1977 position. The new position was calculated by traverse and differs by 13 centimeters from the 1977 position. The station was originally located by resection.

Three additional stations were established during this survey. Their positions are unadjusted field positions.

Signal No.	Station Name
105	PIER
103	SKIT
202	SITKA HARBOR ROCK DAYBEACON

SITKA HARBOR ROCK DAYBEACON is a navigation daymark and was located by intersection. The station was used only for mini-ranger critical system checks. Stations PIER and SKIT were located by traverse.

All station positions are based on the North American Datum of 1927 and the Clark ellipsoid of 1866.

Additional horizontal control information can be found in the Horizontal Control Report for FE298.

G. HYDROGRAPHIC POSITION CONTROL

Range/azimuth was the principle method of positioning control used throughout this survey. On DN 136 range/range control was used in conjunction with an azimuth to conduct side scan operations. On DN 139 "see field sheet" techniques were used to obtain soundings in marinas.

POSITIONING EQUIPMENT

Ranges were measured with Motorola's Mini-Ranger III electronic positioning equipment. Azimuths were measured with a Wild T-2 theodolite (S/N 68648). The following is a list of electronic equipment used:

Mobile equipment configuration

Console/RT pair serial number	EDP #
720/B1405	2123
B0269/B1388	2125
711/911102	2126

Shore equipment

Transponder serial number	Code
G3510	A
911634	D
01789	O

CALIBRATIONS AND SYSTEM CHECKS

Opening baseline calibrations were conducted in Seattle, Washington, in March and April, 1987, and closing calibrations were conducted in Sitka, Alaska, on DN 140, both in accordance with PMC OPORDER 3.3. The opening baseline ranged from the Pacific Marine Center (PMC) Pier A to the U.S. Naval Reserve Center, an overwater distance of 989.6 meters. The closing baseline ranged from the U.S. Coast Guard pier at Sitka, Alaska, to geodetic station CHAN, an overwater distance of 1253.3 meters. Both baselines were measured using a Hewlet-Packard model 3808A electronic distance measuring instrument (S/N 1723A00202). Calibration data is included ~~in Appendix V.~~ with the survey data.

System checks were conducted in accordance with the PMC OPORDER 3.3. Critical check methods included theodolite intersection and fixed point observations.

Fixed point observations were possible from two navigational aids in Sitka Harbor, JAPONSKI ISLAND ENTRANCE LIGHT and SITKA HARBOR ROCK DAYBEACON, and from station LIBRA, in Sawmill Cove. All three points have third order, class I positions.

Opening and closing baseline calibrations were meaned to obtain the correctors used in plotting the final field sheet. Console/RT pair B0269/B1388 in vessel 2125 had no closing calibration performed due to the RT failing in the field after completion of work on this project, so only the opening calibrations were used.

No other problems were encountered with the mini-rangers during the survey. Summaries of system check results are included ~~in Appendix V.~~ with the survey data.

UNUSUAL POSITIONING TECHNIQUES

To obtain soundings in marinas, "see field sheet" techniques were employed on DN 139 by vessel 2123. Lines of soundings were fixed by reference to slips and jetties and recorded in a sounding volume. They were plotted on blow-ups of the photo-revised chart and positions of line beginnings and ends were scaled off. Ranges were computed to create a data tape with pseudofixes for plotting.

CONTROL PROBLEMS AND UNUSUAL CONFIGURATIONS

Data from DN 132, vessel 2123, was rejected because an observed check angle did not agree with the computed check angle for the stations used. The location of the initial target was questioned. No other control problems were encountered. ✓

No unusual configurations were used during the field examination.

ANTENNA DISTANCE

On vessels 2123, 2125, and 2126 the RT unit is located over the transducer with an ANDIST of 0.0. ✓

H. SHORELINE

The source for shoreline data in the Sitka Harbor area is the 1:5000-scale, photo-revised (1983) Sitka Harbor inset of chart 17327. This manuscript was provided with the support data for the project. ✓

Shoreline features were verified by visual inspection from a small boat on DN 132 and DN 138. A copy of the photo-revised chart inset was annotated and can be found in the raw data files. Appropriate information transferred to the smooth sheets. ✓

Features verified seaward of the mean high water line have been transfered to the final field sheets in black ink. Features added as a result of diver or visual investigations have been shown in black ink. Features that were not found have not been depicted. ✓

Shoreline verification was accomplished in most areas of the field sheet. Shoreline not verified was transfered to the field sheet in brown ink. ✓

Dive investigations are discussed in Section L, COMPARISON WITH THE CHART. Other changes to the shoreline are itemized below.

ITEM: FIXED BRIDGE, ALICE ISLAND TO JAPONSKI ISLAND
LOCATION: 57° 02' 55.2" N, 135° 20' 46.5" W
DISPOSITION: The bridge has been completely removed as part of the creation of Sealing Cove Marina. It is recommended that it be removed from the chart. concur.

ITEM: RUINS NORTH OF UNOCAL FUEL PIER
LOCATION: 57° 03' 07.5" N, 135° 20' 31.0" W
DISPOSITION: On Dn 138 the area was inspected from vessel 2125. Water visibility was 15 feet. There was no evidence of ruins up to 20 meters offshore. An interview with a local resident confirmed the assesment that the ruins no longer exist. It is recommended that they be removed from the chart. concur.

ITEM: WRECK
LOCATION: 57° 03' 09.5" N, 135° 20' 31.0" W
DISPOSITION: Wreck observed in tidal zone during shoreline verification. It is recommended that it be charted as shown on ~~final field sheet~~ this survey. concur.

Shoreline data in the Sawmill Cove area was transferred in brown ink from chart 17326 (1:40,000 scale) and the Sawmill Cove inset (1:5000 scale). A reconnaissance of the shoreline was conducted on DN 128. A copy of the chart inset was annotated and is filed with the field records. Although the currently charted shoreline is adequate in the area, much of the northern portion of Sawmill Cove is congested with semi-permanent barges and floats, giving an appearance somewhat different from the charted representation. An oblique aerial photo was obtained and is included in ~~Appendix XIII.~~ the hydrographer's report. ✓

I. CROSSLINES

A total of 1.1 nautical miles of crosslines were run in Sitka Harbor. This is equivalent to 22 percent of the total mainscheme hydrography in Sitka Harbor.

The following table lists the agreements of soundings for a sample of 30 comparisons made across the sheet.

Crossline Agreement

Soundings within 0.1 fathom	53%
Soundings within 0.2 fathom	83%
Soundings within 0.3 fathom	93%
Soundings within 0.4 fathoms	100%

✓

In all but one case, the crossline agreement was within 0.4 fathoms. A difference of 0.7 fathoms exists between the third sounding out from fix number 3064 (4.7 fathoms) and fix number 6067 (5.4 fathoms). It is suspected that the 0.7 fathom difference between sounding values is due to the presence of a buoy with anchorline. The third sounding out from fix 3064 is very near to a channel buoy and may have ✓

sounded off the buoy's cement anchor or cable. Examination of the fathogram shows a "clean trace" with no side echoes before and after the third out from fix 3064.

A total of 1.0 nautical mile of crosslines were run in Sawmill Cove. This is equivalent to 13 percent of the total mainscheme hydrography run. Nearshore soundings (5 total, with depths averaging 7 fathoms) agree within 0.5 fathom. Offshore soundings (25 total, with depth averaging 30 fathoms) agree within 1 fathom. The difference in sounding agreement may be due to the nature of the bottom in Sawmill Cove. Side scan sonar coverage of the area revealed numerous logs which are resting on the bottom or are suspended in the water column. On one occasion, the side scan sonar tow was snagged on a suspended log. The hydrographer believes these logs in the area may be the reason for some of the differences in the sounding values between crossline and mainscheme.

Both mainscheme lines and crosslines were run on the same day with the same vessel.

J. JUNCTIONS

This survey does not junction with any contemporary survey.

K. COMPARISON WITH PRIOR SURVEYS

This field examination was compared to the following prior surveys:

Registry Number	Scale	Year Surveyed
H-1439	1:15,000	1879
H-2174	1:10,000	1893
H-2174b	1:2,000	1924
H-7189	1:10,000	1947
H-6352 > H-6353 H-8501	1:1,000	1959
H-6357 WD	1:5,000	1938
H-7168	1:1,200	1945

See EVAL RPT Sec. 6

Prior surveys H-1439, H-2174, and H-2174b, on datums precedeing NAD27, were compared to the present survey qualitatively.

H-1439

Prior survey H-1439, from 1879, shows a concentration of soundings around Harbor Rock and the southeast portion of the channel, what is now a fuel pier. Overall, the sounding comparison is good with the exception of mid-channel depths. Current surveys show the mid-channel to be deeper, possibly the result of dredging. Current shoreline is very different

than that of the prior survey, reflecting the effect of filling and development of the Sitka area.

H-2174

The channel shown in H-2174, from 1893, is wider than shown on current surveys and displays depths shallower along the west side of the channel. Overall, the depths appear deeper in mid-channel and shallower along the shore than in the current survey

H-2174b

Prior survey H-2174b, from 1924, is limited to an area southeast of Sitka channel. The current survey did not cover this area except for a dive investigation of the charted ruins off Castle Hill Rock. Survey H-2174b displays "McGraths Dock", the ruins of which are currently charted. A dive investigation discussed in Section L, COMPARISON WITH THE CHART, showed that the submerged pier ruins have been removed and the area is now clear.

H-6351

Prior survey H-6351, from 1938, covers Sitka Harbor channel between 57 03' 21" N to the north, and 56 59' 59" N to the south. A comparison of 30 random soundings between surveys exhibits excellent agreement. Within the vicinity of Harbor Rock, the 1 and 2 fathom contour lines show good agreement. Comparison of shoreline reveals that the northeast shoreline has been developed and filled in order to construct a fueling pier.

H-7163

Prior survey H-7163, completed in 1945, is limited to the eastern half of Sitka channel, bounded to the north by 57° 03' 20" N and to the south by 57° 03' 07" N. Survey H-7163 has no shoreline drawn on but does show cultural features, one of which is the "Old Navy Dock" centered near

57° 03'05" N
135° 20' 45" W

Chart 17327 shows these piers as ruins and the current survey defines new limits to the area of the ruins. These new limits can be found in Section L, COMPARISON WITH THE CHART, of this report.

Sounding agreement is good, the current survey showing soundings somewhat deeper in mid-channel and also deeper along the channel's west shoreline. A comparison of 30 soundings shows that current depths average 0.1 fathom

deeper. Dredging, differences in predicted tides, or possibly the fathometer used could be the source of the difference.

H-7189

Prior survey H-7189, from 1947, extends east from Sitka Harbor to the limits of Camp Coogan Bay, No Thorofare Bay and Silver Bay, including Sawmill Cove.

Sounding agreement with the current survey of Sawmill Cove is good offshore, a comparison of 20 depths being within 1 fathom (depths here averaging 30 fathoms). Nearshore depths, bordering a lumber mill along the west and north shore, are much deeper in the current survey, 5 fathoms vs. 2 fathoms. This is the result of the dredging operation conducted by the lumber mill, which allows deep draft vessels access to the dock. ✓

H-8501

Prior survey H-8501, dated September 1959, extends into the northernmost half of Sawmill Cove and exhibits several of the current cultural features. H-8501 has a limited coverage of the area where logs are received at the mill. Sounding agreement between the two surveys is excellent, H-8501 reflecting the dredging off the dock face and up to the log elevator area. Current survey soundings do not extend up to the log elevator area as there were numerous barges docked in the way/space during this survey. ✓

L. COMPARISON WITH THE CHART

This field examination was compared to the following chart editions during the survey:

Chart Number	Edition	Edition Date
17326	10th	February 9, 1980
17327	17th	May 24,1986

✓

DANGERS TO NAVIGATION

One danger to navigation was found during the survey on DN 133, using side scan sonar and verified by diver investigation on DN 134.. A submerged wreck was discovered 10 meters off the face of the floating breakwater at Thompsen Marina in the northeast section of the harbor. ✓

A local notice to mariners was sent, in conjunction with geodetic positions for navigational aids, to U.S. Coast Guard District 17 on July 12, 1987. ~~(Appendix XII).~~ (Copy attached)

Item	Least Depth	Location	Fixno.
Wreck	3.~~3~~ 2 fathom	57° 03'21.8"N 135° 20'59.5"W	6040

AWOIS ITEM INVESTIGATIONS

Three AWOIS items were investigated that originated from non-NOS sources.

Item 50090

Feature: Charted pier ruins at the entrance to the ~~Japonski Island~~ Sealing Cove Harbor. Sources are BP37781 and CL654/63.

Investigation: Divers performed a visual search of the area on DN 129 (Fixno. 6000-6002). A box search was performed in water exhibiting 30 feet visibility. Four buoys were deployed around the border using an observer with a T-2 theodolite and precalculated angles. First 15-meter tag lines were used to criss-cross the area. Then 30-meter perimeter search was made outside the charted ruin area. No pilings were found that extended above the mudline. Debris was limited to several 3' x 3' concrete anchors, which no longer are in use, extending less than 2 feet above the bottom, and an automotive radiator. The bottom is characterized as gently sloping upwards towards shore, composed of a sandy-silty material. Recommend that the pier ruins charted at:

57° 02' ~~37~~ 50.00" N
135° 20' ~~45~~ 38.00" W

be removed from the chart.

Do not concur.
Chart as foul area.

Item 51077

Feature: Unidentified submerged object in the vicinity of Sitka Harbor lighted buoy 7 (now 11) reported as being struck by a vessel in 1962. Source is NM 11/62.

Investigation: The area was investigated with soundings, side scan sonar, and divers on DN 134 (Fixno. 6036-6039). Soundings and side scan sonar did not exhibit any contacts of significant height in the area. Divers performed a visual search in water exhibiting 40 feet visibility. A 10-meter circle search was used around the reported position of:

57° 03' 11.30" N
135° 20' 47.00" W

which resulted in no object found extending more than 2 feet off the bottom. The area showed a flat muddy bottom just seaward of Harbor Rock shoal which steeply slopes westward. The southwest edge of the shoal was delineated by the divers with least depths as follows:

Depth	Location	
2.2 fathoms	57° 03' 12.0" N	135° 20' 46.8" W
~~2.0~~ 1.9 fathoms	57° 03' 13.2" N	135° 20' 49.0" W

1.3-fathom minimum depth at Lat 57°03'13.15"N, Long 135°20'48.91"W.

It is recommended that the shoal depths be charted and the note "~~shl and rks rep~~ obstr rep 1962" be removed. concur.

Item 51078

Feature: Submerged obstruction along the western edge of Harbor Rock Reef in western channel of Sitka Channel reported being struck by a vessel in 1966. Subsequent COE sweeping operations revealed submerged boulders encroaching the channel. Source is CL1521/66.

Investigation: The area was investigated with soundings, side scan sonar, and divers on DN 134 (Fixno. 6034-6035). Side scan sonar revealed some small contacts that were further investigated via dives. Divers performed a visual search in waters exhibiting 40 feet visibility. A 10-meter circle search was used around the reported position of:

57° 03' 13.10" N
135° 20' 50.00" W.

Divers found the terrain to be a steeply sloping rock bottom sloping down towards the channel, onto a flat bottom. A large boulder was found which extends 6 feet above the bottom. A least depth of 3.5 fathoms (MLLW) was obtained via pneumatic gage. Another boulder, extending 4 feet above the bottom, was found 10 meters inshore of the first, with a (not plotted on sheet)

least depth of 4.2 3.9 fathoms (MLLW). It is recommended that the the note "PA subm bldrs rep" be removed and a submerged rocks be added to the chart at position:

57° 03' 12.82 78" N
135° 20' 49.38 35" W.

concur.

SOUNDINGS

In Sitka Harbor, quality of agreement between survey depths and charted depths is generally good in the northwest and the southeast sections of the area surveyed. Depths differ however, in nearshore areas and in the vicinity of Harbor Rock. Survey depths in these areas tend to be deeper than the charted depths. Survey depths are also generally deeper along the northwest shoreline near the abandoned airfield. This may be due to dredging operations associated with the removal of pier ruins in the area. Further dredging and obstruction clearance throughout the channel may be the reason for current depths being deeper than charted.

The 1 fathom charted at:

57° 03' 13.5" N
135° 20' 50.0" W

is particularly anomalous when compared with depths observed during this survey. The edge of Harbor Rock Shoal was delineated by divers (see AWOIS 51077 investigation) and is inshore of this sounding. Current soundings in the vicinity range from 2 to 4 fathoms. It is recommended the 1 fathom be replaced with representative soundings from the survey. A 1.1-fathom depth was found at Lat 57°03' 14.18"N, Long. 135° 20' 50.68"W approximately 22 meters NW of the charted 1-fathom shoal. Reconnaissance lines run in the southeast section of the Sitka Harbor channel agreed well and no further hydrographic work is indicated.

concur.

The entrance into ~~Japonski Island harbor~~ Sealing Cove Marina was examined with one line of soundings run along the middle of the channel. These depths agreed well with the charted controlling depth of 10 feet. This area was also dredged while expanding the marina and during the removal of some old pier ruins.

See EVAL RPT sec. 7 (c)

Two of the marinas along the eastern shoreline were surveyed using visual references, as no control was available due to obstructions. Sounding lines were also run in Cresent Bay Marina which is located off the final field sheet. Soundings agree well with those charted in these areas and the depths have been plotted for each ~~finger~~ end of the pier in the marinas that do appear on the final field sheet. A 2-fathom sounding was found at Lat. 57° 03' 00.02"N, Long. 135° 19' 43.68"W about 45 meters north of the charted 2-fathom and east of a 2¼-fathom charted sounding.

Dive investigations were conducted to verify/disprove the existance of two shoal depths as requested in Project Instruction Change no. 5.

ITEM: 2 3/4 fathom shoal (Fixno. 6044)
LOCATION: 57° 03' 8.5" N 135° 20' 37.5" W
METHOD: Area was developed with sounding lines to 10 meter spacing. Divers performed a visual search of the area on DN 140. A 10-meter circle search was performed in waters exhibiting 12 feet visibility. No shoal area was found and a depth of 3.4 fathoms (MLLW) was determined using a pneumatic depth gage. The mud bottom was generally flat. Recommend that the 2 3/4 fathom shoal be removed and representative soundings from this survey be charted in the area.

concur.

ITEM: 3 3/4 fathom shoal (Fixno. 6045)
LOCATION: 57° 03' 2.5" N 135° 20' 30.5" W
METHOD: Area was developed with sounding lines to 10 meter spacing. Divers performed a visual search of the area on DN 140. A 45-foot circle search was performed in waters exhibiting 15 feet visibility. No shoal area was found and a depth of 4.7 (MLLW) fathoms was determined using a pneumatic depth gage. The mud bottom was found to be flat, gently sloping towards mid-channel. Recommend that the 3 3/4 fathom shoal depth be removed and representative soundings from this survey be charted in the area.

concur.

In Sawmill Cove a total of eleven soundings from the chart were compared to the survey. Agreement is very good, with the survey showing depths slightly deeper near the face of the dock along the western shore. This reflects the routine dredging conducted by the sawmill.

NON-SOUNDING FEATURES

Eight dive investigations were conducted to verify/disprove the existance of charted non-sounding features in Sitka Harbor.

ITEM: PILE (Fixno. 6042)
LOCATION: 57° 03' 11.3" N 135° 20' 57.0" W
METHOD: Divers performed a visual search of the area on DN 140. A 15-meter circle search was performed in waters exhibiting 20 feet visibility. Several piles were found lying down, averaging 25 feet long, none extending more than 3 feet above bottom. Recommend that submerged pile be removed.

Do not concur. Revise visible pile to subm.

ITEM: SUBMERGED PILE (Fixno. 6043)
LOCATION: 57° 03' 12.4" N 135° 20' 58.7" W
METHOD: Divers performed a visual search of the area on DN 140 in waters exhibiting 20 feet visibility. Divers found the area to be free of piles . Recommend that the charted pile be removed from the chart. concur.

ITEM: PIER RUINS (Fixno. 6032-6033)
LOCATION: RUINS TRENDING NW/SW CENTERED AT
57° 03' 02" N,135° 20' 44" W
METHOD: Divers performed a thorough visual search of the area on DN 134. Several circle searches of 10-meter radius were performed in waters exhibiting 35 feet visibility. Initial inspection showed that the northwesternmost slips of the pier no longer exist above the water line. Divers did discover that at position number 6032* a pair of submerged piles exist, extending at a 45 degree angle up off the bottom. These two piles lie upon the remainder of a slip ruin (the slip is not completely gone). A depth of 2.9 fathom (MLLW) was determined via pneumatic depth gage at the offshoremost part of the pile.

* Lat 57°03'03.22"N Long 135°20'43.78"W

North of the two piles, at position 6033, divers found 2 piles extending 3 feet above mudline. The hydrographer believes this feature corresponds to a charted pile at the same location:

57° 03' 03.92 N
135° 20' 44.53" W. Revise charted pile to subm.

There are no more pilings or ruins in the immediate area.

Recommend that the ~~four~~ three & a portion of another slip northwesternmost slips be removed from the chart and that the charted pile remain and be labeled submerged pile. In addition, recommend that ruins of slip be charted extending out to position 6032: concur.

57° 03' 03.26" N
135° 20' 43.84" W.

ITEM: PIER RUINS (Fixno. 6041)
LOCATION: AREA TRENDING NW/SE CENTERED AT
57° 02' 57" N,135° 20' 35" W
METHOD: Divers performed a visual search of the area on DN 136. A box search was conducted between buoys dropped at precalculated positions and a 5-meter sweep utilized. Divers found the bottom to be littered with debris, much extending 3 feet above mudline. Due to the large amount of wood and metal debris, no least ✓

depth was obtained over any single object. Position 6041 marks the southeastern limit of debris while the southwestern limit can only be estimated as range/azimuth positioning of buoys was not possible due to an obstruction between the observer and the buoy. Divers did observe more debris shoreward of the SE bouy, in the charted cable crossing area. *Area shown as pier ruins*

Recommend that the charted submerged ruin zone be maintained in width, however the north-south extent may be shortened to reflect position 6041: *concur.*

57° 02' 58.29" N
135° 20' 32.16 "W

and a point 30 meters shoreward from it.

Further investigation revealed that the two charted dolphins at:

57° 02' 57.3" N
135° 20' 33.1" W and ✓

57° 02' 57.6" N
135° 20' 31.3" W

were found lying horizontal on the bottom, not extending more than three feet above the bottom. Recommend they be deleted. *Do not concur. Chart as subm obstrs with foul note.*

ITEM: PIER RUINS (Fixno. 5116-5118)
LOCATION: 57° 02' 50" N 135° 20' 02" W
METHOD: Divers performed a visual search of the area on DN 138. A box search was performed in water exhibiting 30 feet visibility. Two buoys were deployed using an observer with a T-2 theodolite and precalculated angles. A line connected the two buoys with weights. Two 40-meter sweeps of the area were performed. Divers found the area to be clean of debris and approximately eight pilings were found to be laying horizontal, not extending more than one foot above the bottom. Recommend that the submerged ruins be removed from the chart. *(Ruins off sheet limits)*

Do not concur. Retain as submerged ruins.

ITEM: PIER RUINS (Fixno. 6028-6031)
LOCATION: 57° 03' 06" N 135° 20'46"W
METHOD: Divers performed a visual search of the area on DN 133. A box search was performed, using 10-meter sweeps, in water exhibiting 45 feet visibility. Buoys were deployed to mark the area and two cement anchors were lowered, each with a 50-meter line attached. A submerged piling was found extending 4 feet above the ✓

mudline and is the southeast corner of what remains of the pier ruins. A least depth of 1.4 fathoms (MLLW) was obtained with a pneumatic depth gage. No other ruins extending above 3 feet were found. Recommend that the pier ruins be removed from the chart. Recommend that a submerged piling be charted at position 6028:

57^{o} 03' 04.84" N
135^{o} 20' 43.58" W.

Do not concur. Revise charted depiction to subm pier ruins as shown on smooth sheet.

ITEM: PIER RUINS (Dive investigation 11)
LOCATION: 57^{o} 02' 58" N 135^{o} 20' 21" W
METHOD: Divers performed a visual search of the area on DN 138. Visual sweeps in water exhibiting 15 feet visibility disproved the existence of all ruins and submerged piles. No least depths were obtained and positioning was by visual reference. Recommend that all ruins and submerged piles within the area bounded by:

57^{o} 02' 57.6" N to 57^{o} 03' 00.8" N and
135^{o} 20' 16.2" W to 135^{o} 20' 23.8" W

be removed from the chart.

concur.

ITEM: PIER RUINS (Dive Investigation 12)
LOCATION: 57^{o} 03' 04" N 135^{o} 20' 29" W
METHOD: Divers performed a visual search in waters exhibiting 15 feet visibility. Divers performed a sweep pattern in the charted area and 20 meters around the perimeter. The charted ruins were observed along with much debris on the bottom inside the charted area. The building shown over the ruins on the photo-revised chart was not present and should be deleted. Recommend that the ruins otherwise remain as shown on the chart. *concur.*

In Sawmill Cove, detached positions were taken to locate numerous uncharted dolphins and to locate log booms and a mooring buoy. No dive investigations were conducted.

A log boom on the east side of Sawmill Cove is a semi-permanent feature. The log boom is flexible to allow for the delivery of material for the mill and it's position and shape will vary. The final field sheet shows the log boom at its position on DN 135 and this should not be construed as its only orientation. The currently charted position of the log boom is adequate. ✓

The two mooring buoys charted at

57° 02' 45.3" N
135° 13' ~~31~~ 28.6" W and

57° 02' 37.5" W
135° 13' 40.5" W

are no longer present and it is recommended that they be deleted. A third mooring buoy charted at — concur.

57° 02' 30.0" N
135° 13' 29.0" W

is 274 meters from the detached position obtained by this survey. Recommend that the buoy's position be revised to Fixno. 3484: — concur.

57° 02' 24.5~~1~~4" N
135° 13' 13.~~16~~24" W.

M. ADEQUACY OF SURVEY

This field examination is complete and adequate to supersede prior surveys in the areas of coverage.

Do not concur. See EVAL RPT.

N. AIDS TO NAVIGATION

Eighteen aids to navigation and landmarks were located and compared to the Light List (Vol. VI, 1987) and the DIPFILE provided with support data. Forms NOAA 76-40, NONFLOATING AIDS OR LANDMARKS FOR CHARTS, and annotated DIPFILE listings have been prepared and forwarded per project instructions. Copies may be found in Appendix X. ✓

The following floating aids to navigation were located with a T2 azimuth and two ranges.

Name/Characteristics	Position/Fixno.	Light List change
SITKA HARBOR CHANNEL LIGHTED BUOY 9 Q G	57°03'15.07"N 135°20'52.98"W Fixno. 3067	Change 57/03.2 to 57/03.3. ✓
SITKA HARBOR CHANNEL LIGHTED BUOY 11 FL G 4sec	57°03'11.65"N 135°20'46.96"W Fixno. 3068.	Change 57/03.1 to 57/03.2.

The positions of these aids agreed reasonably well with those charted; for Buoy 9 the distance difference was 2 meters and for Buoy 11 the difference was 10 meters. However, comparison with the Light List showed a slight ✓

difference in latitude, as shown in the table above. The buoys are critical to navigating the Sitka Harbor channel since they mark the edge of Harbor Rock shoal.

The following fixed aids to navigation represent additions to the chart and the Light List. They were located using third order geodetic techniques but third order checks could not be obtained. The difficulty was possibly due to the short distances observed, and the daymark pilings appeared to move slightly in wave action.

Name/Characteristics	Position
JAPONSKI HARBOR DAYBEACON 2 Red	57°02'48.794"N 135°20'19.881"W
JAPONSKI HARBOR DAYBEACON 4 Red	57°02'46.991"N 135°20'27.374"W

The following fixed aids to navigation represent revisions to the chart, though the positions agree with the approximate positions given in the Light List.

Name/Characteristics	Position/Accuracy
JAPONSKI HARBOR DAYBEACON 5 Green (Change "1" to "5" on chart)	57°02'50.052"N 135°20'40.678"W/3rd
JAPONSKI HARBOR DAYBEACON 7 Green (Change "3" to "7" on chart)	57°02'54.421"N 135°20'46.110"W/<3rd
JAPONSKI HARBOR ENTRANCE LIGHT 6 FL R 6sec (Change "2" to "6" on chart)	57°02'50.934"N 135°20'39.595"W/3rd
SITKA HARBOR ROCK DAYBEACON Red/White (Remove "PA")	57°03'13.821"N 135°20'47.365"W/3rd
CHANNEL ROCK LIGHT 8 FL R 2.5sec	57°03'38.707"N 135°22'02.494"W/3rd
ECKHOLMS LIGHT FL W 6sec	57°00'37.479"N 135°21'26.235"W/3rd
ENTRY POINT LIGHT 1 FL G 6sec (Remove "PA")	57°01'58.939"N 135°14'54.007"W/3rd

The following charted aid was verified with an unchecked position, but does not appear on the Light List:

GALANKIN ISLAND LIGHT Private F R	57°02'10.766"N 135°19'54.947"W.

One charted aid, SUGARLOAF POINT LIGHT, no longer exists and was not given in the Light List. It should be deleted from the chart at:

57°02'05"N
135°13'24"W.

concur. (charted aid outside sheet limits)

The following landmarks were verified at their charted positions using third order techniques.

Name	Position
NORTH TANK	57°03'09.958"N,135°21'10.077"W
SOUTH TANK	57°03'02.300"N,135°21'07.281"W
SITKA JAPONSKI IS BR NE TWR	57°02'53.988"N,135°20'17.340"W
SITKA JAPONSKI IS BR NW TWR	57°02'53.579"N,135°20'25.432"W
SITKA PIONEERS HOME FLAGPOLE	57°03'00.749"N,135°20'10.911"W
STACK CHARCOAL ISLAND	57°02'46.791"N,135°21'03.061"W

An underwater electrical cable southeast of Sitka Harbor was described by Mr. Ray Stephans of the city engineers office. The cable does not cross the area surveyed but runs south-southeast of the harbor, connecting several of the islands in the Eastern Anchorage. A copy of chart 17327 showing the cable path is ~~in Appendix XIII~~. attached to this report.

O. STATISTICS

VESSEL	NUMBER OF POSITIONS	NAUTICAL MILES OF SOUNDINGS
2123	718	29.2*
2125	119	2.0
2126	169	3.3
Total	1006	34.5

*includes 9.1 nautical miles of side scan sonar trackline.

SQUARE MILES OF HYDROGRAPHY	0.08
BOTTOM SAMPLES	12
SOUND VELOCITY CASTS	4
TIDE STATIONS	1
CURRENT STATIONS	0
MAGNETIC STATIONS	0
DAYS OF PRODUCTION	15

P. MISCELLANEOUS

Bottom samples were not submitted to the Smithsonian Institution as this was not required in the project instructions. ✓

A proposed dock was described by Mr. Michael Schmidt of the city planners office. The dock will be located along the western shore, south of the government pier. Mr. Schmidt provided a chart copy with the proposed pier site and engineering drawings. These are ~~included in Appendix XIII~~ attached to this report.

Q. RECOMMENDATIONS

All work on this field examination is considered to be complete and adequate for chart revision. See EVAL RPT Sec. 9

The currently charted 1:5000-scale inset of Sawmill Cove on Chart 17326 does not adequately portray the approach to the frequently used dock on the western shore of the cove. It is recommended that the inset be expanded southwards to show this approach. concur.

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished with a PDP 8/e Hydroplot computer system. The following is a list of programs used to carry out the acquisition and processing.

Number	Description	Version
RK 112	HYPERBOLIC, R/R HYDROPLOT	3/01/86
RK 201	GRID, SIGNAL, AND LATTICE PLOT	4/18/75
RK 211	RANGE-RANGE NON-REAL TIME PLOT	2/13/84
RK 212	VISUAL STATION TABLE LOAD	4/01/74
RK 221	COMB R/R & HYPER PLOT NON-RT	3/26/86
RK 300	UTILITY COMPUTATIONS	10/21/80
RK 330	REFORMAT AND DATA CHECK	5/04/76
PM 360	ELECTRONIC CORRECTOR ABSTRACT	2/02/76
RK 407	GEODETIC INVERSE/DIRECT COMPUTATUION	9/25/78
RK 409	GEODETIC UTILITY PACKAGE	9/20/78
AM 500	PREDICTED TIDE GENERATOR	11/10/72
RK 530	LAYER CORRECTIONS FOR VELOCITY	5/10/76
RK 561	H/R GEODETIC CALIBRATION	12/01/82
RK 562	THEODOLITE CALIBRATION	9/05/84
AM 602	ELINORE-LINE ORIENTED EDITOR	12/08/82
AM 606	TAPE DUPLICATOR	8/22/74
AM 607	SELF-STARTING BINARY LOADER	8/10/80
RK 610	BINARY TAPE DUPLICATOR	1/31/85
RK 900	PLOT TEST TAPE GENERATOR FOR AM 902	5/07/76
RK 901	CORE CHECK	3/01/72
AM 902	REAL TIME CHECKOUT	11/10/72
DA 903	DIAGNOSTIC--INSTRUCTION TIMER	2/27/76
RK 905	HYDROPLOT CONTROLLER CHECKOUT	3/18/81
RK 935	HYDROPLOT HARDWARE TEST	3/15/82
RK 950	HARDWARE TEST (DOCUMENTATION ONLY)	6/02/75

S. REFERRAL TO REPORTS

Supplementary echo sounding and electronic control reports have not been prepared. Complete information on these subjects is included in this report. The following supplemental reports contain additional information relevant to the survey.

Name	Date Sent
Horizontal Control Report OPR-0912-RA-87, FE298	July, 1987
User Evaluation Report OPR-0912-RA-87	July, 1987

Coast Pilot Report OPR-0912-RA-87	July, 1987
Chart Agency Visitation Memo SP-PMC-2-87	June, 1987
Marine Mammal Report RP-12-87	July, 1987

Respectfully Submitted,

Timothy C. O'Mara

Timothy C. O'Mara, ENS, NOAA

SUPPLEMENTAL INFORMATION

Aerial Photo of Sawmill Cove

Underwater Cable Plan

Proposed Sitka Harbor Dock Plan

MASTER STATION LIST
S-0912-RA-87
SITKA HARBOR
ALASKA

VERSION 6/29/87

100 3 57 02 44838 135 20 16094 250 0002 000000
/ALEUT 1938 QUAD 571352 STA. 1004

101 3 57 02 40042 135 20 39389 139 0003 000000
/LOVE 1938 QUAD 571352 STA. 1124

102 3 57 02 53247 135 20 30710 139 0013 000000
/BARANOF 1977 CORRECTED RAINIER G.P.

103 4 57 02 45911 135 20 22191 250 0002 000000
/SKIT 1987 RAINIER G.P.

[redacted]

105 3 57 03 01738 135 20 39053 250 0003 000000
/PIER 1987 RAINIER G.P.

106 4 57 03 09594 135 20 21535 139 0027 000000
/UNION 1938 QUAD 571352 STA. 1210

[redacted]

[redacted]

109 3 57 01 57150 135 13 51004 250 0001 000000
/CURVE 1946 QUAD 571352 STA. 1050

[redacted]

113 3 57 02 05138 135 11 50223 250 0001 000000
/PLUTO 1946 QUAD 571352 STA. 1159

114 3 57 02 26945 135 13 58307 139 0002 000000
/BUCKO 1946 QUAD 571352 STA. 1032

[redacted]

[redacted]

202 3 57 03 13821 135 20 47365 139 0004 000000
/SITKA HARBOR ROCK DAYBEACON 1987 RAINIER G.P.

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [X] TO BE CHARTED
- [ ] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
NOAA Ship RAINIER	Alaska	Sitka Harbor	26May87

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-0912-RA-87		FE298	NAD27

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	POSITION LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	POSITION LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	METHOD AND DATE OF LOCATION FIELD	CHARTS AFFECTED
DAYBEACON	JAPONSKI HARBOR DAYBEACON 2 Red;Height=16';	57-02	48.794 1509.39	135-20	19.881 335.33		F-2-6-L May, 1987	17324 17326 17327
DAYBEACON	JAPONSKI HARBOR DAYBEACON 4 Red;Height=16';	57-02	46.991 1453.62	135-20	27.374 461.72		F-2-6-L May, 1987	" " "

-179(87)

NOAA FORM 76-40 (8-74)

Replaces C&GS Form 567.

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NONFLOATING AIDS ~~OR LANDMARKS~~ FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [X] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
NOAA Ship RAINIER	Alaska	Sitka Harbor	26May87

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-0912-RA-87		FE298	NAD27

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
DAYBEACON	JAPONSKI HARBOR DAYBEACON 5 Green;Height=15'; Change from '1'to'5'	57-02	50.052 1548.31	135-20	40.678 686.12		F-2-6-L May, 1987	17324 17326 17327
DAYBEACON	JAPONSKI HARBOR DAYBEACON 7 Green;Height=16'; Change from '3'to'7'	57-02	54.421 1683.46	135-20	46.110 777.74		F-2-6-L May, 1987	" " "
LIGHT	JAPONSKI HARBOR ENTRANCE LIGHT 6 FL R 6s;Height=19'; Change '2'to'6'	57-02	50.934 1575.59	135-20	39.595 667.85		F-2-6-L May, 1987	" " "
DAYBEACON	SITKA HARBOR ROCK DAYBEACON Red/White;Height=21';	57-03	13.821 427.54	135-20	47.365 798.53		F-3-6-L May, 1987	" " "
LIGHT	CHANNEL ROCK LIGHT 8 FL R 2.5s;Height=26';	57-03	38.707 1197.36	135-22	02.494 42.05		F-3-6-L May, 1987	" " "
LIGHT	ECKHOLMS LIGHT FL W 6s;Height=42';	57-00	37.479 1159.38	135-21	26.235 442.90		F-3-6-L May, 1987	17326 17327
LIGHT	ENTRY POINT LIGHT 1 FL G 6s;Height=18';	57-01	58.939 1823.22	135-14	54.007 911.31		F-3-6-L May, 1987	17326
LIGHT	GALANKIN IS LIGHTHOUSE F R;Height=56'	57-02	10.766 333.04	135-19	54.947 926.79		F-3-6-L May, 1987	17326 17327
	L-779(87)							

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [x] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [ ] TO BE REVISED
- [x] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
NOAA Ship RAINIER	Alaska	Sitka Harbor	26May87

The following objects HAVE [x] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-0912-RA-87		FE298	NAD27

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	″ D.M. Meters	POSITION LONGITUDE ° ′	″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
LIGHT	SUGARLOAF POINT LIGHT FL 2.5s	57-02	05	135-13	24		V-Vis 5/87	17326

C-779(87)

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [X] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
NOAA Ship RAINIER	Alaska	Sitka Harbor	26May87

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-0912-RA-87		FE298	NAD27

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	″ D.M. Meters	POSITION LONGITUDE ° ′	″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
STACK	STACK CHARCOAL ISLAND Height = 58'	57-02	46.791 1447.43	135-21	03.061 51.63		F-3-6-L May, 1987	17324 17326 17327

L-779(88)

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	RAINIER personnel ENS John C. Damm	☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED	CAPT Carl W. Fisher, Commanding Officer	FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64.

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.

EXAMPLE: 75E(C)6042
8-12-75

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.

EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.

EXAMPLE: P-8-V
8-12-75
74L(C)2982

II. TRIANGULATION STATION RECOVERED

When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.

EXAMPLE: Triang. Rec.
8-12-75

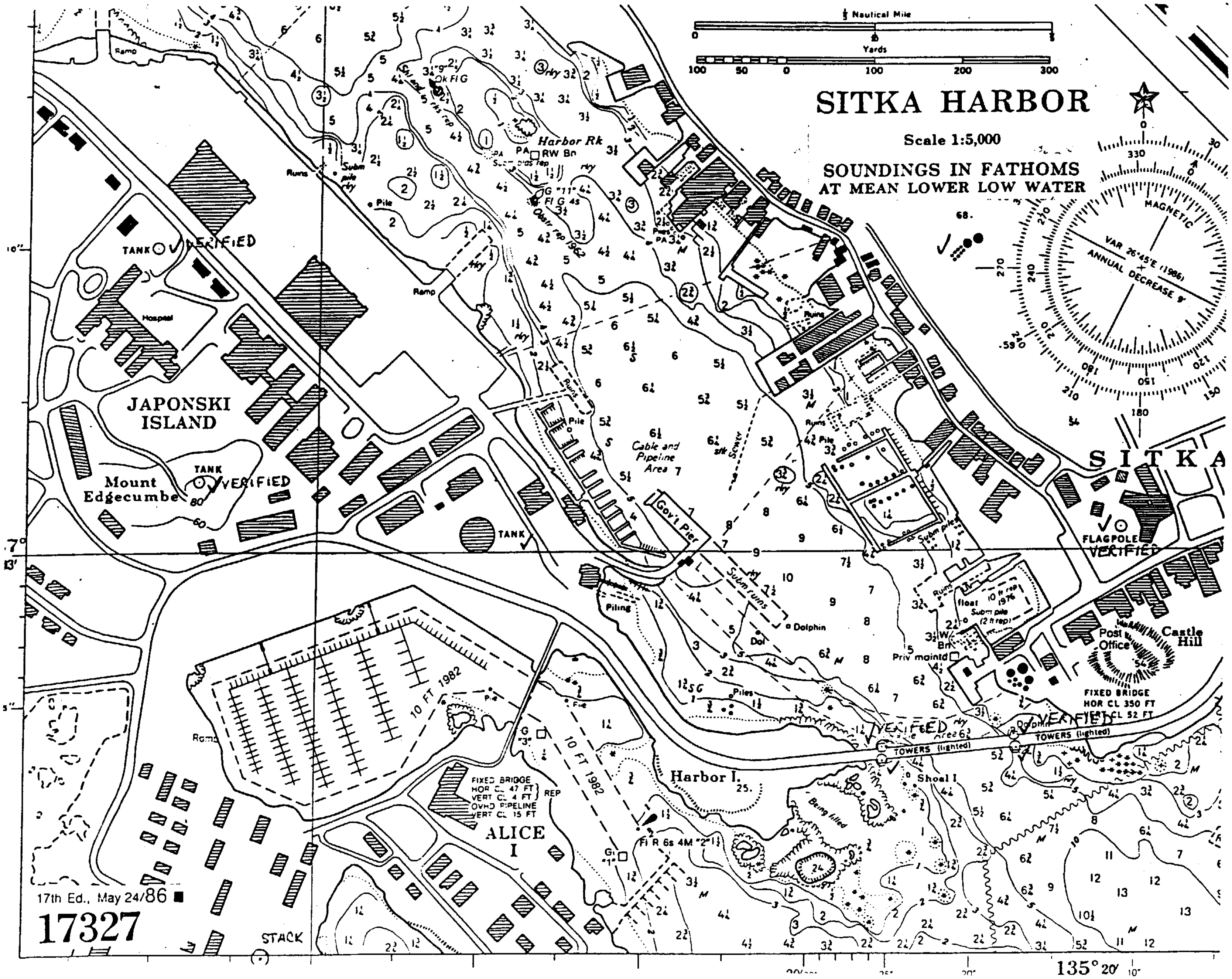
III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

☆ U.S.GPO:1975-0-665-080/1155


SITKA HARBOR
Scale 1:5,000
SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER
Nautical Mile
Yards
MAGNETIC
VAR 26°45'E (1986)
ANNUAL DECREASE 9'
SITKA
JAPONSKI
ISLAND
Mount
Edgecumbe
Hospital
TANK
VERIFIED
Harbor Rk
Gov't Pier
Cable and
Pipeline
Area
Subm ruins
Dolphin
FLAGPOLE
Post
Office
Castle
Hill
FIXED BRIDGE
HOR CL 350 FT
VERT CL 52 FT
TOWERS (lighted)
Shoal I
Being filled
Harbor I.
10 FT 1982
FIXED BRIDGE
HOR CL 47 FT
VERT CL 4 FT
OVHD PIPELINE
VERT CL 15 FT
REP
ALICE
I
Piling
Piles
Ramp
Ruins
Priv maintd
STACK
17th Ed., May 24/86
17327
135° 20'

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

NOAA Ship RAINIER S-221
1801 Fairview Ave. East
Seattle, WA 98102

July 12, 1987

Commanding Officer
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, AK 99802

RE: Notice to Mariners

REF: Radio Message R122355Z JUL 87

Dear Sir:

We request the following be published in the Local Notice to Mariners for the Seventeenth District:

The NOAA Ship RAINIER of the National Ocean Service has completed charting operations in Sitka Harbor and Sawmill Cove. The following items represent additions or revisions to three NOS charts:

17324	12TH ED NOV 12/83	1:40000	NAD27 DATUM
17326	10TH ED FEB 9/80	1:40000/1:5000	NAD27 DATUM
17327	17TH ED MAY 24/86	1:10000/1:5000	NAD27 DATUM

One danger to navigation was discovered:

1. Uncharted wreck with least depth of 3.3 fathoms (MLLW) at 52/03/21.8N 135/20/59.5W bearing 116 degrees true, distance 0.64 nautical miles from CHANNEL ROCK LIGHT.

Third order, class I positions on the NAD27 datum were established for the following aids to navigation:

2. SITKA HARBOR ROCK DAYBEACON 57/03/13.821N 135/20/47.365W
3. CHANNEL ROCK LIGHT 8 57/03/38.707N 135/22/02.494W
4. JAPONSKI HARBOR ENTRANCE LIGHT 6 57/02/50.934N 135/20/39.595W
5. JAPONSKI HARBOR DAYBEACON 5 57/02/50.052N 135/20/40.678W
6. ECKHOLMS LIGHT 57/00/37.479N 135/21/26.235W
7. ENTRY POINT LIGHT 1 57/01/58.939N 135/14/54.007W

Less than third order positions were established with third order techniques for the following aids to navigation:

8. JAPONSKI HARBOR DAYBEACON 2 57/02/48.794N 135/20/19.881W
9. JAPONSKI HARBOR DAYBEACON 4 57/02/46.991N 135/20/27.374W
10. JAPONSKI HARBOR DAYBEACON 7 57/02/54.421N 135/20/46.110W

An unchecked position was established for:

11. GALANKIN ISLAND LIGHTHOUSE 57/02/10.766N 135/19/54.947W

This is advance information subject to office review.

Sincerely,

Carl W. Fisher

Carl W. Fisher
Captain, NOAA
Commanding Officer

Enclosure
cc: DMAHTC
N/CG222
N/MOP

RTTUZYUW RUHPTEF0202 1932355-UUUU--RUHPSUU.
ZNR UUUUU
R 122355Z JUL 87
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
INFO NOAAMOP SEATTLE WA
DMAHTC WASHINGTON DC //NVS//
ACCT CM-VCAA
BT
UNCLAS
RA-PMC-132-99-93.
REQUEST THE FOLLOWING BE PUBLISHED IN THE LOCAL NOTICE TO MARINERS FOR THE SEVENTEENTH DISTRICT:
//THE NOAA SHIP RAINIER OF THE NATIONAL OCEAN SERVICE HAS COMPLETED CHARTING OPERATIONS IN SITKA HARBOR AND SAWMILL COVE. THE FOLLOWING ITEMS REPRESENT ADDITIONS OR REVISIONS TO THREE NOS CHARTS:

17324	12TH ED NOV12/83	1:40000	NAD27 DATUM
17326	10TH ED FEB09/80	1:40000/1:5000	NAD27 DATUM
17327	17TH ED MAY24/86	1:10000/1:5000	NAD27 DATUM

ONE DANGER TO NAVIGATION WAS DISCOVERED:
1. UNCHARTED WRECK WITH LEAST DEPTH OF 3.3 FATHOMS (MLLW) AT 52/03/21.8N 135/20/59.5W BEARING 116 DEGREES TRUE DISTANCE 0.64 NAUTICAL MILES FROM CHANNEL ROCK LIGHT.

THIRD ORDER CLASS I POSITIONS ON THE NAD27 DATUM WERE ESTABLISHED FOR THE FOLLOWING AIDS TO NAVIGATION:
2. SITKA HARBOR ROCK DAYBEACON 57/03/13.821N 135/20/47.365W
3. CHANNEL ROCK LIGHT 8 57/03/38.707N 135/22/02.494W
4. JAPONSKI HARBOR ENTRANCE LIGHT 6 57/02/50.934N 135/20/39.595W
5. JAPONSKI HARBOR DAYBEACON 5 57/02/50.052N 135/20/40.678W
6. ECKHOLMS LIGHT 57/00/37.479N 135/21/26.235W
7. ENTRY POINT LIGHT 1 57/01/58.939N 135/14/54.007W

FOURTH ORDER POSITIONS WERE ESTABLISHED WITH THIRD ORDER TECHNIQUES FOR THE FOLLOWING AIDS TO NAVIGATION:
8. JAPONSKI HARBOR DAYBEACON 2 57/02/48.794N 135/20/19.881W
9. JAPONSKI HARBOR DAYBEACON 4 57/02/46.991N 135/20/27.374W
10. JAPONSKI HARBOR DAYBEACON 7 57/02/54.421N 135/20/46.110W

AN UNCHECKED POSITION WAS ESTABLISHED FOR:
11. GALANKIN ISLAND LIGHTHOUSE 57/02/10.766N 135/19/54.947W

THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW.//
A LETTER WITH ATTACHED CHARTLET IS BEING MAILED TO YOU TO CONFIRM THIS MESSAGE.
BT
#0202

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

NOAA Ship RAINIER S-221
1801 Fairview Ave. East
Seattle, WA 98102

July 16, 1987

Commanding Officer
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, AK 99802

RE: Notice to Mariners

REF: My Radio Messages R122355Z JUL 87 and P151748Z JUL 87 and my letter of July 13, 1987.
Your Radio Message P 142209Z JUL 87.

Dear Sir:

Please correct paragraph 1. of my letter of July 12 to show a latitude of '57' instead of '52'. The letter is repeated in its entirety below, with the correction made:

We request the following be published in the Local Notice to Mariners for the Seventeenth District:

The NOAA Ship RAINIER of the National Ocean Service has completed charting operations in Sitka Harbor and Sawmill Cove. The following items represent additions or revisions to three NOS charts:

17324	12TH ED NOV 12/83	1:40000	NAD27 DATUM
17326	10TH ED FEB 9/80	1:40000/1:5000	NAD27 DATUM
17327	17TH ED MAY 24/86	1:10000/1:5000	NAD27 DATUM

One danger to navigation was discovered:

1. Uncharted wreck with least depth of 3.3 fathoms (MLLW) at 57/03/21.8N 135/20/59.5W bearing 116 degrees true, distance 0.64 nautical miles from CHANNEL ROCK LIGHT.

Third order, class I positions on the NAD27 datum were established for the following aids to navigation:

2. SITKA HARBOR ROCK DAYBEACON 57/03/13.821N 135/20/47.365W
3. CHANNEL ROCK LIGHT 8 57/03/38.707N 135/22/02.494W
4. JAPONSKI HARBOR ENTRANCE LIGHT 6 57/02/50.934N 135/20/39.595W
5. JAPONSKI HARBOR DAYBEACON 5 57/02/50.052N 135/20/40.678W
6. ECKHOLMS LIGHT 57/00/37.479N 135/21/26.235W
7. ENTRY POINT LIGHT 1 57/01/58.939N 135/14/54.007W

Less than third order positions were established with third order techniques for the following aids to navigation:

8. JAPONSKI HARBOR DAYBEACON 2 57/02/48.794N 135/20/19.881W
9. JAPONSKI HARBOR DAYBEACON 4 57/02/46.991N 135/20/27.374W
10. JAPONSKI HARBOR DAYBEACON 7 57/02/54.421N 135/20/46.110W

An unchecked position was established for:

11. GALANKIN ISLAND LIGHTHOUSE 57/02/10.766N 135/19/54.947W

This is advance information subject to office review.

Sincerely,

Carl W. Fisher

Carl W. Fisher
Captain, NOAA
Commanding Officer

Enclosure
cc: DMAHTC
N/CG222
N/MOP

CWF
CWS

Kad / 100 J

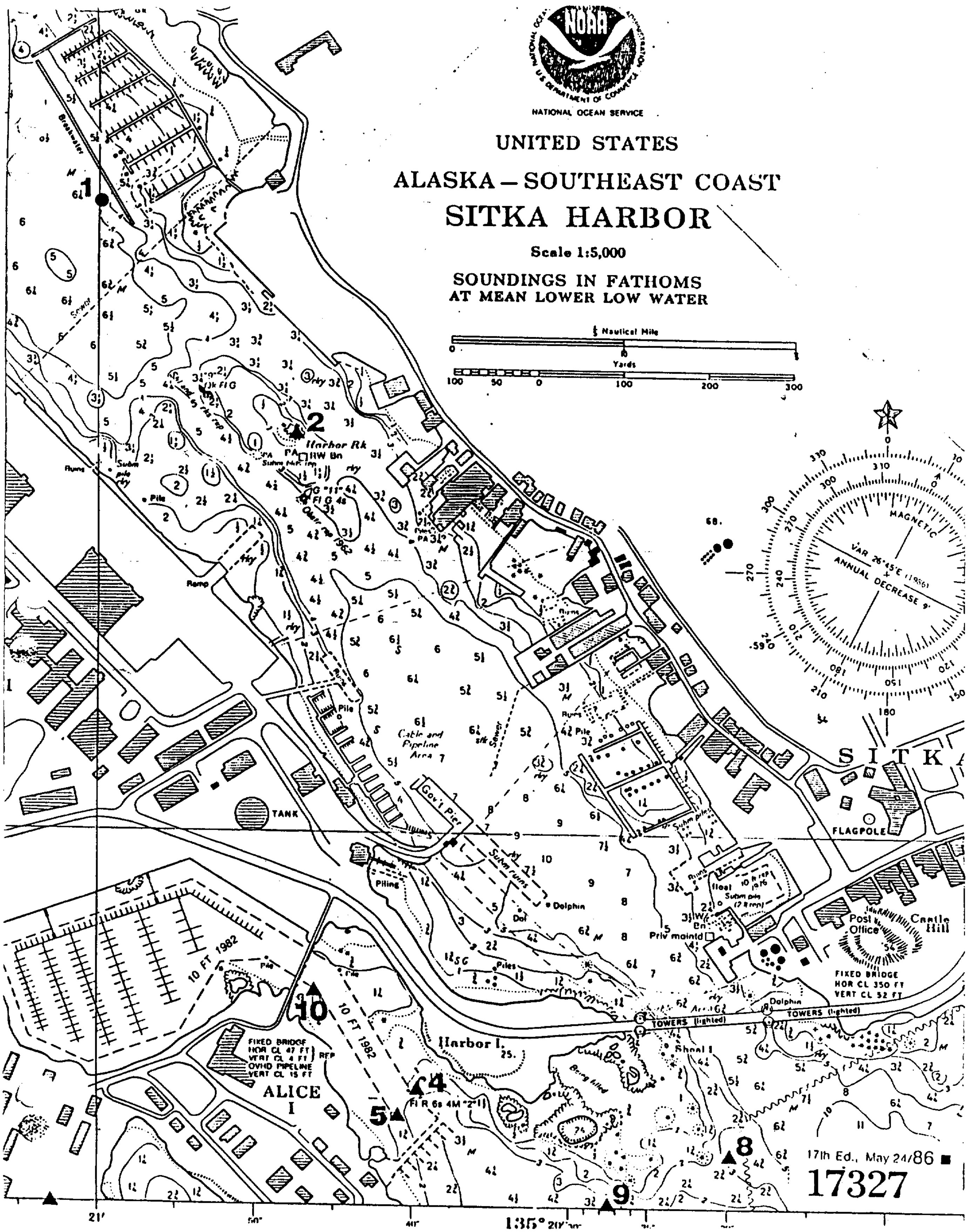
6423 K / 0050
16 JUL

PTTUZYUW RUHPTEF0208 1961748-UUUU--RUHPSUU.
ZNR UUUUU
P 151748Z JUL 97
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
INFO NOAAMOP SEATTLE WA
UMAHTC WASHINGTON DC //NVS//
ACCT CM-VCAA
BT
UNCLAS
REFERENCE MY R 122355Z JUL 97
CORRECT PARAGRAPH 1. (ONE) AS FOLLOWS:

1. UNCHARTED WRECK WITH LEAST DEPTH OF 3.3 FATHOMS (MLLW)
AT 57/03/21.8N 135/20/59.5W BEARING 116 DEGREES TRUE, DISTANCE 0.64
NAUTICAL MILES FROM CHANNEL ROCK LIGHT.

A CORRECTED LETTER HAS BEEN MAILED TO YOU TO CONFIRM THIS MESSAGE.
BT
#0208

NNNN


NATIONAL OCEAN SERVICE
UNITED STATES
ALASKA – SOUTHEAST COAST
SITKA HARBOR
Scale 1:5,000
SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER
Nautical Mile
Yards
MAGNETIC
VAR 26°45'E (1986)
ANNUAL DECREASE 9'
SITKA
FLAGPOLE
Post Office
Castle Hill
FIXED BRIDGE
HOR CL 350 FT
VERT CL 52 FT
TOWERS (lighted)
Harbor Rk
Breakwater
Ruins
Pile
Ramp
TANK
Cable and Pipeline Area
Gov't Pier
Dolphin
Piling
Piles
Priv maintd
Shoal I
Harbor I.
10 FT 1982
FIXED BRIDGE
HOR CL 47 FT
VERT CL 4 FT
OVHD PIPELINE
VERT CL 15 FT
ALICE I
Fl R 6s 4M "2"
17th Ed., May 24/86
17327
135°
1
2
4
5
8
9
10

APPROVAL SHEET

Descriptive Report to Accompany

Hydrographic Survey

RA-5-1-87

FE-298

Standard procedures were followed in accordance with the Hydrographic Manual, Third Edition; Hydrographic Guidlines; and PMC OPORDER in producing this survey. The data were examined daily during acquisition and processing phases of the survey.

The field sheet and accompanying records have been examined by me, are considered complete and adequate for charting purposes, and are approved.

Carl W. Fisher

Carl W. Fisher
Captain, NOAA
Commanding Officer

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: July 8, 1987

Marine Center: Pacific

OPR: 0912

Hydrographic Sheet: FE-298

Locality: Sitka Harbor and Sawmill Cove, Alaska

Time Period: May 9 - 22, 1987

Tide Station Used: 945-1600 Sitka AK

Plane of Reference (Mean Lower Low Water): 4.72 Ft.

Height of Mean High Water Above Plane of Reference: 9.1 Ft.

Remarks: Recommended Zoning:

1. Zone Direct

James R. Hubbard
Chief, Tidal Datum Quality
Assurance Section

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

GEOGRAPHIC NAMES

SURVEY NUMBER

FE-298

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (title)										1
ALEUTSKI ISLAND										2
ALICE ISLAND										3
BARANOF ISLAND										4
HARBOR ISLAND										5
HARBOR ROCK										6
JAPONSKI ISLAND										7
SAWMILL COVE										8
SEALING COVE MARINA	(cultural feature)									9
SHOAL ISLAND										10
SILVER BAY										11
SITKA										12
SITKA HARBOR										13
										14
										15
										16
				Approved:						17
										18
				Charles E. Harrington						19
				Chief Geographer - N/CG2x5						20
				OCT 14 1987						21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

FILE COPY

AUG 17 1987

N/MOP21x2/MM

TO: Commanding Officer
NOAA Ship RAINIER

FROM: N/MOP - Robert L. Sandquist

SUBJECT: Preprocessing Examination of FE-298, Alaska, Sitka, Sitka Harbor and Sawmill Cove

Hydrographic survey FE-298 has been reviewed in accordance with Hydrographic Survey Guideline No. 15, and the Preprocessing Examination Critique for this survey is attached. Survey FE-298 is accepted for Pacific Marine Center processing.

Inconsistencies exist in the identification of approximately one-third of the "Not to be Smooth Plotted" (NSP) data in Sitka Harbor. Final field sheets, data tapes, data printouts, and the Abstract of Positions do not designate the same data as NSP. Raw data printouts do not note all sounding lines which are not to be smooth plotted. Serious consideration was given to returning the survey to RAINIER for further processing and clarification of NSP data. Instead, all NSP designations will be removed from Sitka Harbor data tapes and the entire data set will be processed by Nautical Chart Branch. All data should be carefully reviewed to ensure that designations and notations are consistent.

The Preprocessing Examination Critique is designed to provide information which will be useful to the Command for maintaining the quality of future hydrographic surveys. I encourage you to use this information constructively. Your comments on specific critique items are welcome.

Attachment

cc: N/MOP2x1
N/MOP21x2
N/MOP211
N/CG2

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Pacific Marine Center
Nautical Chart Branch
7600 Sand Point Way NE
Seattle, Washington 98115-0070

August 14, 1987 N/MOP21x2/MM

TO: N/MOP - Robert L. Sandquist

FROM: N/MOP 21 - Thomas W. Richards

SUBJECT: Preprocessing Examination for FE-298

I. SURVEY INFORMATION

A. Field No. RA-5-1-87 Registry No. FE-298

B. State: Alaska

General Locality: Sitka

Sublocality: Sitka Harbor and Sawmill Cove

C. Project Instructions: S-0912-RA-87

Original dated: August 5, 1986

Change No. 1 dated: August 12, 1986
Change No. 2 dated: September 5, 1986
Change No. 3 dated: September 17, 1986
Change No. 4 dated: February 12, 1987
Change No. 5 dated: April 14, 1987

D. Dates:

Field Work Commenced: May 7, 1987
Field Work Completed: May 26, 1987

plus 6 weeks: July 7, 1987

Data received at Marine Center: July 17, 1987

plus 1 month: August 17, 1987

Examination critique transmitted to field August 17, 1987

Target for completion of Marine Center processing February 17, 1988

II. PREPROCESSING EXAMINATION CRITIQUE

Hydrographic survey FE-298 was performed by personnel of the NOAA Ship RAINIER, Captain Carl W. Fisher, Commanding Officer. The following personnel supervised portions of the data acquisition: Lieutenant Commander Schomaker, Lieutenant White, Ensign Damm, Ensign Poston, Ensign O'Mara, Ensign Hill, Ensign Meis and Ensign Larsen.

In accordance with the Preprocessing Examination System set forth in Hydrographic Survey Guideline (HSG) No. 15, Section III, the following items are brought to your attention:

A. Danger to Navigation Report:

RAINIER reported one danger to navigation within the limits of FE-298.

No additional dangers to navigation were identified during the preprocessing examination.

B. Compliance with Instructions:

Survey FE-298 generally complies with the Project Instructions. There are three AWOIS items within the Sitka Harbor area.

C. Final Field Sheets:

The hydrographer determined least depths of 3.5fm and 4.1fm for two rocks within the area of AWOIS #51078 (Sitka Harbor). The least depths do not appear on the final field sheet. The least depths of all investigations should be included on the final field sheets [HM 1.5.2, 4.5.7.2; PMC OPORDER Section 3.5.1.a.2.(b).(2)].

One five-fathom depth curve was omitted on the final field sheet in Sitka Harbor (see Attachment A).

Inconsistencies exist between the Sitka Harbor final field sheet and the soundings designated "NSP" in the Abstract of Positions (Appendix VII of Descriptive Report). The Abstract of Positions should accurately reflect the soundings on the final field sheet [PMC OPORDER Section 3.5.1.d.1.(a)].

D. Descriptive Report:

Section B (Area Surveyed) does not state why soundings were not acquired in the eastern limit of the Sawmill Cove survey area. A diagram attached to a note to the Operations Officer from the Fourth Officer dated 8 May 1987 shows the area east of the log boom to be filled with logs. It is assumed the logs remained inside the boom throughout the period of the survey and the area was therefore inaccessible.

The following comments refer to Section L (Comparison with the Chart) of the Descriptive Report.

The positions of three items are incorrectly stated:

AWOIS #50090 is listed in the AWOIS listing at latitude 57°02'50.00"N, longitude 135°20'38.00"W; the Descriptive Report states position to be latitude 57°02'37.00"N, longitude 135°20'45.00"W.

A 2.75fm shoal is charted and reported in Change No. 5 to Project Instructions at latitude 57°03'08.5"N, longitude 135°20'37.5"W; the Descriptive Report lists its position as latitude 57°03'8.5"N, longitude 135°20'7.5"W.

A 3.75fm shoal is charted and reported in Change No. 5 to Project Instructions at latitude 57°03'02.5"N, longitude 135°20'31.5"W; the Descriptive Report lists its position as latitude 57°03'2.5"N, longitude 135°20'30.5"W.

A 10m circle search was performed by divers on AWOIS #51077. The AWOIS listing requires a 50m-radius search in water greater than 1fm. The search is considered adequate, however, as sidescan sonar was also deployed for the investigation.

The hydrographer investigated AWOIS #51077 and recommended the removal of the charted "shl and rks rep" note associated with this item. The charted note for this item is "obstr rep 1962".

The hydrographer recommends deleting four charted slips; the final field sheet shows only three slips were deleted (see Attachment B).

The hydrographer states that Galankin Light is a charted privately-maintained navigation aid which does not appear in the Coast Guard Light List. Galankin Island Light does not appear on the charts of this area.

F. Sounding Volumes and/or Raw Data Printouts:

Raw data printouts contained no annotations for the type of hydrography conducted (developments, etc.). The beginning and end of feature investigations should be noted on the data printouts [HM 4.8.3.10.13].

Some data not to be smooth-plotted (NSP) were not annotated on the raw data printouts. All NSP data should be annotated as such on the raw data printouts [PMC OPORDER Section 3.5.1.a.2].

Five dolphins were noted in the data printouts but no heights were determined. Elevations of dolphins should be determined so the feature will be correctly depicted on the smooth sheet [HSG 35, "Source Cartographic Codes and Symbols", Table B-3, Part 2].

H. Horizontal Control:

The Horizontal Control Report was briefly reviewed by N/MOP222. All comments below concern the Horizontal Control Report or control data.

Horizontal control data cannot be accessed at this time as data were forwarded on one high-density disk. These data were copied onto several disks formatted for a double-density drive so the data can be reviewed. All data disks should be formatted and entered on disks which are compatible with an IMB PC XT.

Battery Island Lighthouse was observed but does not appear on control sketches and is not described in the report.

Two of the three control sketches do not show all common observations, thereby making verification of computations difficult.

The three control sketches were drawn to a small scale. Larger scale sketches will greatly aid in the verification of control data computations.

The names of stations within the horizontal control books are not the true station names. Actual station names should be used during field observations.

Station ALEUT RM1 and RM2 were observed twice. The residuals created by errors (due to short-distance observations) resulted in the computation of incorrect values within the MTEN Combined List of Horizontal Directions. A comparison between the inverse-to-azimuth checks and observed values cannot be done at this time because the data (on high-density disk) cannot be accessed.

The Horizontal Control Report states Galankin Island Lighthouse is a new position; the Descriptive Report states the light was verified without a check angle. This light cannot be entered into the NGS data base since it does not have a check angle. Other inconsistencies between the Descriptive Report and Horizontal Control Report exist; not all have been resolved at this time.

K. Special and/or Ancillary Reports:

The Electronic Control Report and Corrections to Echo Soundings Report were not submitted as all data and information are included within the Descriptive Report.

L. Automated Data Check:

Spooling of survey data was intermittently halted due to time sequence errors within data tapes.

N. Survey Acceptance:

The preprocessing examination for FE-298 was conducted under the time constraints of HSG 15. All comments contained herein are based on a spot check of the data, and it is possible that some problem areas have not been addressed.

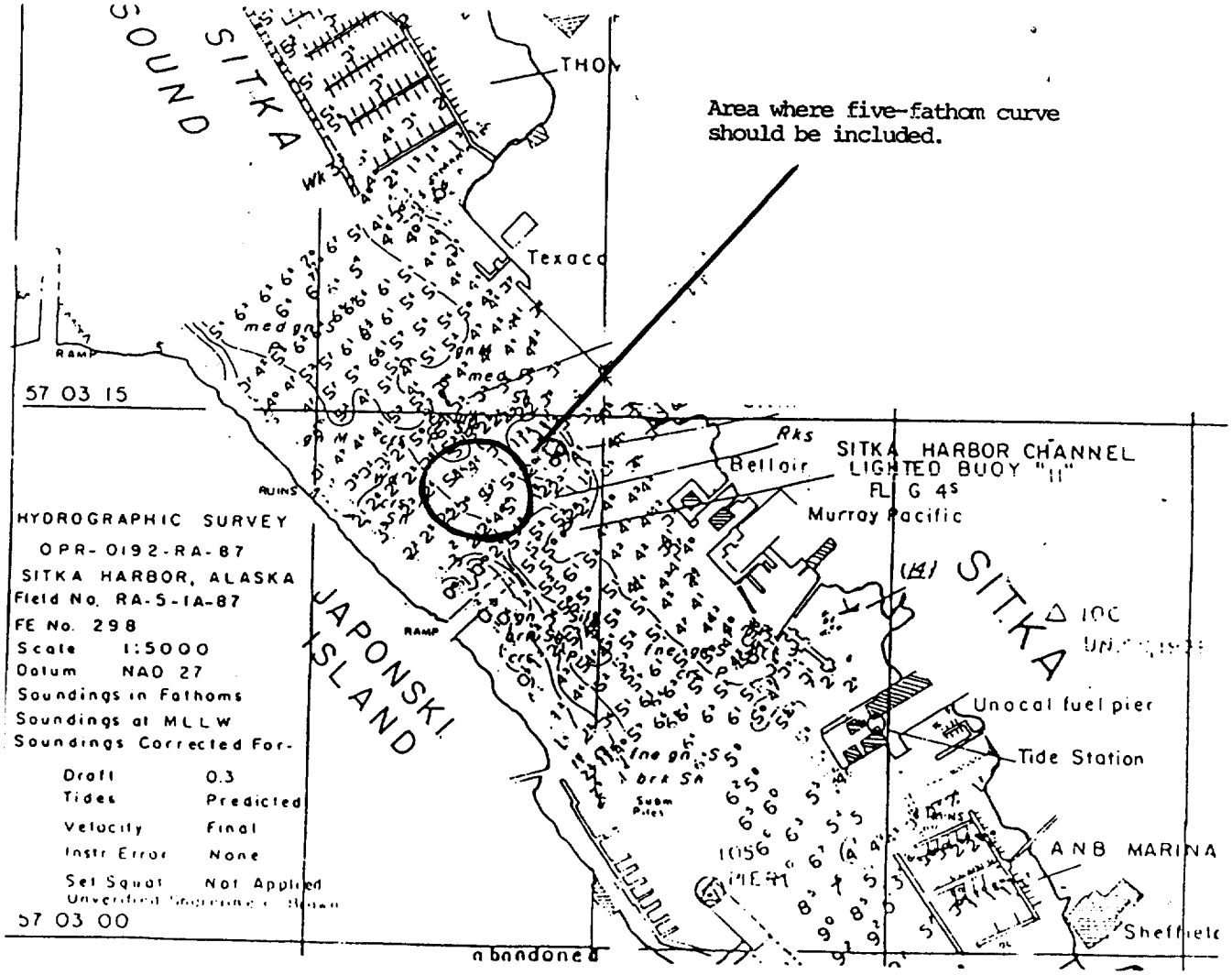
Except for the items noted in the critique, survey FE-298 is in compliance with the Project Instructions. I recommend that FE-298 be accepted for Nautical Chart Branch processing.

Prepared by:

Marlene Mozgala

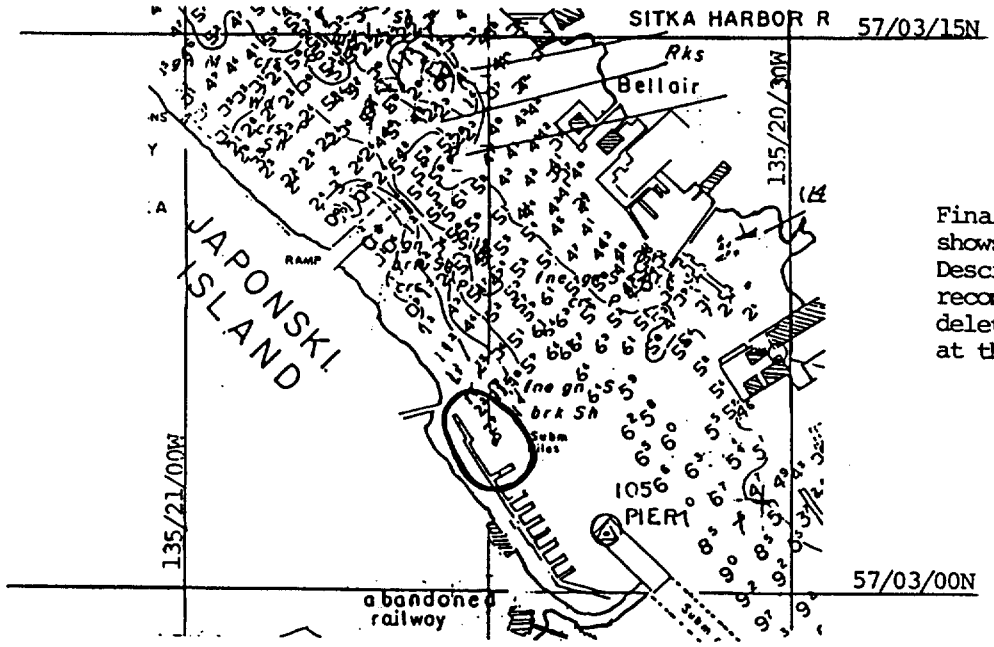
Tor Saether, Hydrographer
Norwegian Hydrographic Service

ATTACHMENT A



ATTACHMENT B

Areas circled on copies of field sheet and chart are the areas in question.



Final field sheet shows 3 slips deleted; Descriptive Report recommends 3 slips be deleted and ruins shown at the 4th slip.

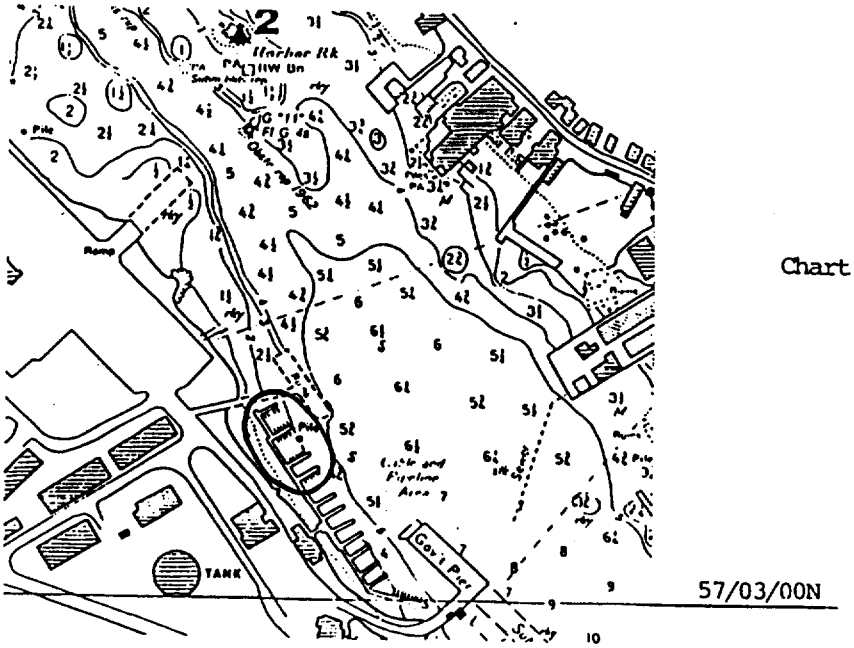


Chart 17327

NOAA FORM 77-27(HI) (9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: FE-298

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	3*	SMOOTH OVERLAYS: POS., ARC, EXCESS	15*
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	2

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	3					
ENVELOPES						
VOLUMES	1					
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List)

PHOTOBATHYMETRIC MAPS (List)

NOTES TO THE HYDROGRAPHER (List)

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List): 17326, 17327

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			749
POSITIONS REVISED	—	—	27
SOUNDINGS REVISED	—	—	36
CONTROL STATIONS REVISED	—	—	
	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION	—	—	—
~~VERIFICATION OF CONTROL~~	—	—	—
VERIFICATION OF POSITIONS	63.5	—	63.5
VERIFICATION OF SOUNDINGS	110.00	—	110.00
~~VERIFICATION OF JUNCTIONS~~	—	—	—
~~APPLICATION OF PHOTOBATHYMETRY~~	—	—	—
~~SHORELINE APPLICATION VERIFICATION~~	—	—	—
COMPILATION OF SMOOTH SHEET	49.0	—	49.0
COMPARISON WITH PRIOR SURVEYS AND CHARTS	—	20.0	20.0
~~EVALUATION OF SIDE SCAN SONAR RECORDS~~	—	—	—
~~EVALUATION OF WIRE DRAGS AND SWEEPS~~	—	—	—
~~EVALUATION REPORT~~		48.0	48.0
~~GEOGRAPHIC NAMES~~	—	—	—
OTHER: DIGITIZING	—	—	—
*USE OTHER SIDE OF FORM FOR REMARKS. TOTALS	222.5	68.0	

Pre-processing Examination by: LT M. Mozgala	Beginning Date: 5/25/87	Ending Date: 8/17/87
Verification of Field Data by: J. Stringham, I. Almacen	Time (Hours): 222.5	Ending Date: 12/7/87
Verification Check by: B. Olmstead	Time (Hours): 21.5	Ending Date: 1/29/88
Evaluation and Analysis by: I. Almacen	Time (Hours): 68.0	Ending Date: 3/23/88
Inspection by: D. Hill	Time (Hours): 2	Ending Date: 4-21-88

* Page-size smooth plots included in the Descriptive Report

PACIFIC MARINE CENTER
EVALUATION REPORT
FE-298

1. INTRODUCTION

Survey FE-298 is a field investigation accomplished by the NOAA Ship RAINIER under the following Project Instructions.

S-0912-RA-85, dated August 5, 1986
CHANGE NO.1, dated August 12, 1986
CHANGE NO.2, dated September 5, 1986
CHANGE NO.3, dated September 17, 1986
CHANGE NO.4, dated February 12, 1987
CHANGE NO.5, dated April 14, 1987

This survey, in southeast Alaska covering the area of Sitka Harbor, Sawmill Cove and the entrance to Sealing Cove Marina, includes the investigation of charted submerged ruins. Inside Crescent Bay Marina, located east of the entrance to Sitka Harbor, the survey consists of the verification of charted soundings. The scope of this survey was subsequently expanded to include the verification of two charted shoal soundings listed in Change 5 of the Project Instructions. Other than these specific investigations the survey quality is not adequate to be considered basic throughout the surveyed area. A more detailed discussion of the survey adequacy to supersede prior surveys and charts is contained in sections 6 and 7. The bottom of Sitka Harbor is generally made up of sand and mud with some patches of rocky shoal areas while at Sawmill Cove the bottom is composed mainly of silt. Depths range from 0 to 9.9 fathoms around Sitka Harbor and from 2.4 to 33.0 fathoms at Sawmill Cove.

This survey was plotted onto three separate page-sized mylar sheets covering the areas of Sitka Harbor, Sawmill Cove and Crescent Bay Marina, respectively.

Predicted tides for Sitka were used during the survey for the reduction of soundings while approved hourly heights zoned from gage 945-1600, Sitka, were used for final sounding reduction during office processing.

The field sheet parameters have been revised to center hydrography on the smooth sheet and to change the projection to polyconic. The TRA, sound velocity and electronic control correctors are adequate. The accompanying computer printout contains the revised parameters.

A digital file, generated for this survey, includes categories of information required to comply with N/CG2 Hydrographic Survey Guideline No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections F and G of the hydrographer's report and the Horizontal and Electronic Control Reports for S-0912-RA-85, contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are NGS published and 1987 field values based on NAD 27. These values were used for the computation of positions during office processing. The smooth sheet and accompanying overlays have been annotated with NAD 83 adjustment ticks based on values determined by N/CG121. Geographic positions based on the NAD 83 may be plotted on the smooth sheet utilizing the NAD 27 projection by applying the following corrections:

Latitude: 1.304 seconds (40.3 meters)
Longitude:-6.356 seconds (-107.2 meters)

The year of establishment of control stations shown on the smooth sheet originates with the hydrographer's signal list and is subject to change pending certification of the data by NGS.

There are no weak fixes (angles of intersection less than 30 degrees or more than 150 degrees) noted on this survey.

The shoreline source for this survey is NOS chart 17327, 17th edition, May 24, 1986. The Sitka Harbor area was supplemented with 1983 photo revisions appearing on a film copy of the chart supplied by headquarters. The shoreline of Sitka Harbor is shown on the smooth sheet in black. The shoreline in Sawmill Cove and Crescent Bay Marina is shown in brown for orientation purposes only.

The wreck shown on the field sheet at latitude 57°03'09.5"N, longitude 135°20'32.2"W was observed along the low water line during shoreline verification; however, no position data was obtained in the field. The wreck symbol was carried forward on the smooth sheet as depicted on the final field sheet.

The position of the southeast corner of the logboom at Sawmill Cove was located during this survey; however, contrary to what was depicted on the field sheet, no dolphin exists at this location according to the field records. The area should be charted as shown on the smooth sheet.

3. HYDROGRAPHY

Hydrography within the limits of the field investigation, except for the areas mentioned in this report, is adequate to:

a. delineate the bottom configuration, determine least depths, and to draw the standard depth curves;

b. reveal that there are no significant discrepancies or anomalies requiring further investigation; and

c. show that the survey had been properly controlled and soundings are correctly plotted.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No.3, the Hydrographic Survey Guidelines, and the PMC OPORDER, except as noted in the attached copy of the Preprocessing Examination Report, dated August 14, 1987, and as follows.

a. Geographic positions of several charted features were not accurately recorded in the hydrographer's report.

b. The wreck discovered at latitude 57°03'09.5"N, longitude 135°20'32.2"W was not described as required by the PMC OPORDER, Figure 3.5.1.

c. Geographic names were used in the report which do not appear on nautical charts and which were not supported by appropriate documentation for approval as required by the PMC OPORDER, Figure 3.5.1.

d. Recommendations for the removal from charts of submerged obstructions were made incorrectly. The hydrographic records clearly documented several hazards, which if removed as recommended, would seriously compromise the quality of nautical charts.

e. Some submerged debris was not adequately located or described and therefore could not be properly displayed on the smooth sheet.

5. JUNCTIONS

There are no contemporary junction surveys. Comparison with charted depths within the adjoining areas reveals satisfactory agreement with this field examination.

6. COMPARISON WITH PRIOR SURVEYS

H-1439 (1879), 1:15,000
H-2174 (1893), 1:10,000
H-2174b (1924), 1:2,000
H-6351 (1938), 1:1,000
H-6352 (1938), 1:5,000
H-6353 (1938-47), 1:10,000
H-7163 (1945), 1:1,200
H-7189 (1947), 1:10,000
H-8501 (1959), 1:1,000

Surveys H-1439 (1879) and H-2174 (1893) are the earlier surveys of Sitka Harbor and vicinity and were subsequently superseded by surveys H-6351, H-6352 and H-6353 of 1938. Surveys H-6351 and H-6352 were later partially superseded by survey H-7163. Survey H-7189 was superseded by survey H-8501 within the common area of coverage. The surveys of 1924 to 1947

provide a more extensive coverage of the harbor as does survey H-8501 of Sawmill Cove. Two isolated shoal soundings, 25 feet at latitude 57°03'11.0"N, longitude 135°20'48.5"W and 26 feet at latitude 57°03'15.7"N, longitude 135°20'55.5"W, were carried forward from survey H-7163. The existence of these two shoal depths was confirmed by a 1945 U.S.Navy dive investigation in the area. Except for the two soundings noted above, comparisons with the later prior surveys are satisfactory taking into consideration the significant changes that had occurred in the area as a result of continuing development of Sitka Harbor and Sawmill Cove.

H-6357WD (1938), 1:5,000

Comparison with this wire drag survey indicates generally good agreement with the exception of selected soundings. Some of these leadline depths were specifically investigated by divers during the present survey. Since the previously located shoal depths were not supported by similar depths from FE-298 and the bottom consists of mud rather than rock, the earlier depths are considered superseded. The exceptions are a 3-fathom depth at latitude 57°03'11.4"N, longitude 135°20'41.1"W, which is described on the drag sheet as boulders, and a 3-fathom depth at latitude 57°03'16.0"N, longitude 135°20'46.7"W. Since these depths were not adequately investigated, the depths and note have been carried forward to the present survey.

There are no AWOIS items originating from prior surveys.

FE-298 is not adequate to supersede the prior surveys within the entire common area. Sounding development of the bottom is generally not intensive enough to consider the prior surveys discredited. The exceptions to this are in the areas of Thomsen Marina, ANB Marina, Sealing Cove Marina and Crescent Bay Marina, all newly constructed and not appearing on any prior survey. Also, the main harbor area southeast approximately 500 meters from Thomsen Marina is sufficiently developed to supersede most of the prior survey information. The 25-foot and 26-foot depths were carried forward from survey H-7163 since there is insufficient development to supersede them. These depths do not appear on current editions of nautical charts and may have been discredited by miscellaneous sources. The present survey development of Sawmill Cove is adequate to supersede prior surveys H-7189 and H-8501 in the common area.

7. COMPARISON WITH CHART

Chart 17326, 10th Edition, dated February 9, 1980; scale 1:5,000 (Sawmill Cove Inset) Chart 17327, 17th Edition, dated May 24, 1986; scale 1:5,000 (Sitka Harbor Inset)

a. Hydrography Charted information originates from the prior surveys mentioned in section 6 of this report and from other miscellaneous sources. Discrepancies noted during this survey are discussed in section L of the hydrographer's report and as follows.

The group of four (4) piles charted at latitude 57°02'55.0"N, longitude 135°25'35.0"W was found during a visual investigation; however, no position data for the piles were obtained in the field. The pile symbols were transferred to the smooth sheet as shown on the field sheet.

The following charted features were investigated and are considered disproven. They should be deleted from the chart.

Charted Feature	Latitude (N)	Longitude (W)
Dolphin	57°02'54.1"	135°20'17.3"
Submerged pile (2 ft rep)	57°02'57.7"	135°20'20.5"
Ruins	57°02'58.0"	135°20'23.0"
Submerged piles	57°03'00.8"	135°20'21.0"
Submerged piles	57°03'00.2"	135°20'22.7"
Ruins	57°03'07.5"	135°20'31.0"

Contrary to what was depicted on the field sheet, the above listed dolphin at latitude 57°02'54.1"N, longitude 135°20'17.3"W was not found, as noted in the field records.

A 1983 photogrammetric revision of the harbor shows the line of piles charted along the offshore end of a pier at latitude 57°03'11.0"N, longitude 135°20'39.0"W are now covered by the reconstructed pier. The remaining note pertaining to these piles (piles PA) should be deleted from the chart. This 1983 photo revision document is being forwarded with the survey records.

The Japonski Harbor Entrance Light "2", charted at latitude 57°02'51.0"N, longitude 135°20'40.0"W was changed to "6" and moved to the location of the previously charted pile at latitude 57°02'50.9"N, longitude 135°20'39.6"W. However, no information was provided by the hydrographer as to what was left of the structure where the light was formerly installed. It is recommended that the possible remains of the structure be charted as a submerged ruins until it can be established that the ruins do not exist.

The charted note, "Shl to 3-3/4 fms rep 1972", pertaining to an area along the southern end of Sawmill Cove wharf, latitude 57°02'39.0"N, longitude 135°13'42.0"W, was neither verified in the field nor mentioned in the hydrographer's report. It is recommended that the note be retained as charted.

In general, this field examination is not adequate to supersede the charted hydrography within the area of common coverage. Except in the areas of the AWOIS developments, sounding development is not sufficiently dense to supersede the charted information.

b. AWOIS The following AWOIS items originate with prior Notices to Mariners and Chart Letters: 51077, 51078 and 50090. Except for AWOIS item 50090, the disposition of the items is adequately discussed in section L of the hydrographer's report. These items were investigated using echo sounders, side scan sonar and divers.

AWOIS item 50090 was investigated by divers and no pilings extending above the mudline were found in the area. However, several 3 ft.x 3 ft. concrete anchors, debris and other obstructions were discovered in the area of the

pier ruins. The locations of these navigational hazards were not determined and therefore could not be portrayed on the smooth sheet. It is recommended that the site of the ruins be charted as a foul area, until the hazards are adequately located or removed.

c. Controlling Depths The charted 10-foot controlling depth of the channel leading to Sealing Cove Marina was investigated. Contrary to what was mentioned in the hydrographer's report, the sounding line was actually run closer to the southern limits and not along the middle of the channel. A 1.4-fathom depth is the shallowest depth found except for a 1-fathom depth found directly over the edge of the previously dredged entrance to the marina. This sounding is not considered to be a reportable danger to navigation; however, mariners should be advised that possible shoaling may occur along the edges of the dredged channel. The channel limits appearing on the smooth sheet conform to the location of the aids to navigation. Since the aids were repositioned the channel limits differ from those presently charted.

The charted 10-foot depth reported in 1976 for a small basin located at latitude 57°02'58.0"N, longitude 135°20'18.5"W was not verified during this survey. The charted depth note should be retained as charted.

d. Aids to Navigation With the exception of the entrance lights to Crescent Bay Marina, geographic positions and condition of fixed and floating aids were verified during this survey. The aids listed on the hydrographer's Danger to Navigation Report were reobserved and positions established to third-order accuracy. They were found to be in good condition and adequately serve their intended purpose. A copy of the NOAA Form 76-40 is attached to the hydrographer's report.

e. Dangers to Navigation A Danger to Navigation Report (copy attached) concerning the uncharted wreck discovered during field investigation and the updated positions of navigational aids was sent by the hydrographer to the 17th Coast Guard District in Juneau, Alaska for inclusion in the Local Notice to Mariners. No additional dangers were identified during office processing.

f. Geographic Names With the exception of Thomsen Marina, ANB Marina, and Crescent Bay Marina included as cultural features, all other names appearing on the smooth sheet are approved by the Chief Geographer.

g. Miscellaneous Information regarding the proposed pier at Harbor Island and the location of the underwater electrical cable in the area was obtained from the Sitka city planners and engineers office. Copies of chart 17327 showing the electrical cable location and the proposed pier site including an engineering plan of the structure are included in the hydrographer's report.

8. COMPLIANCE WITH INSTRUCTIONS

FE-298 adequately complies with the Project Instructions noted in section 1 of this report.

9. ADDITIONAL FIELD WORK

This is an adequate field examination; however, additional field work on low priority basis is required to determine the location and extent of the features not adequately investigated as mentioned in section L of the hydrographer's report and the submerged ruins and foul areas mentioned in section 7 of this report. Also, because of the ongoing development projects around Sitka Harbor and Sawmill Cove, contact must be maintained with the Coast Guard, Corps of Engineers and the city of Sitka to update the chart of the area.

Isagani A. Almacen
Cartographer

This survey has been examined and it meets Charting and Geodetic Services' standards and requirements for use in nautical charting. The survey is recommended for approval.

Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR FE-298

I have reviewed the smooth plots, accompanying data, and reports of this hydrographic survey. The hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth plots and digital data file for use in nautical charting.

Thomas W. Richards 4/25/88
Chief, Nautical Chart Branch (Date)

CLEARANCE:

SIGNATURE AND DATE:

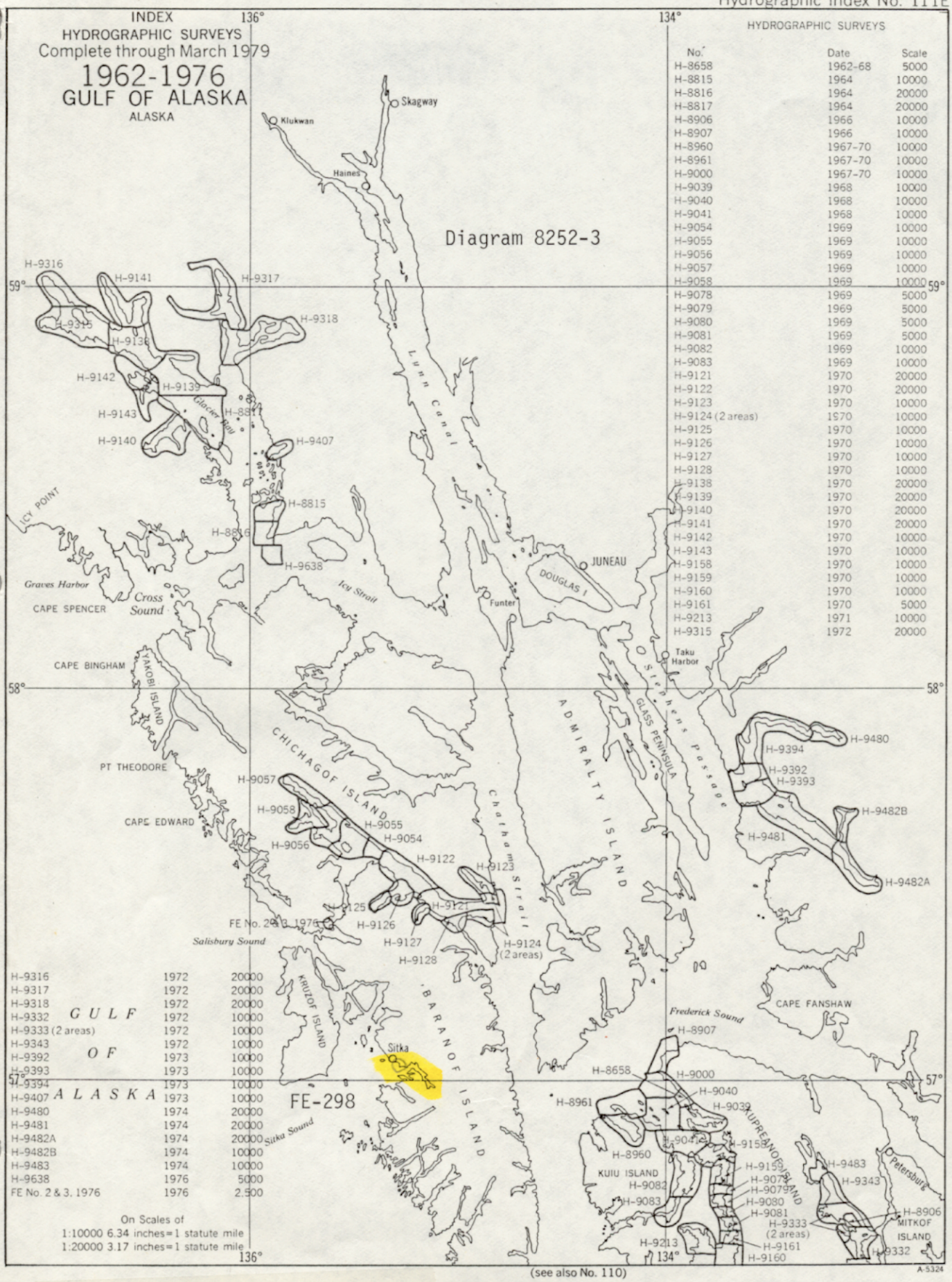
N/MOP2:LWMordock — 4/25/88

After review of the smooth plots and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Robert L. Faucett 4/25/88
Director, Pacific Marine Center (Date)

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Washington, D.C.

Hydrographic Index No. 111E



No.	Date	Scale
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H-8815	1964	10000
H-8816	1964	20000
H-8817	1964	20000
H-8906	1966	10000
H-8907	1966	10000
H-8960	1967-70	10000
H-8961	1967-70	10000
H-9000	1967-70	10000
H-9039	1968	10000
H-9040	1968	10000
H-9041	1968	10000
H-9054	1969	10000
H-9055	1969	10000
H-9056	1969	10000
H-9057	1969	10000
H-9058	1969	10000
H-9078	1969	5000
H-9079	1969	5000
H-9080	1969	5000
H-9081	1969	5000
H-9082	1969	10000
H-9083	1969	10000
H-9121	1970	20000
H-9122	1970	20000
H-9123	1970	10000
H-9124 (2 areas)	1970	10000
H-9125	1970	10000
H-9126	1970	10000
H-9127	1970	10000
H-9128	1970	10000
H-9138	1970	20000
H-9139	1970	20000
H-9140	1970	20000
H-9141	1970	20000
H-9142	1970	10000
H-9143	1970	10000
H-9158	1970	10000
H-9159	1970	10000
H-9160	1970	10000
H-9161	1970	5000
H-9213	1971	10000
H-9315	1972	20000

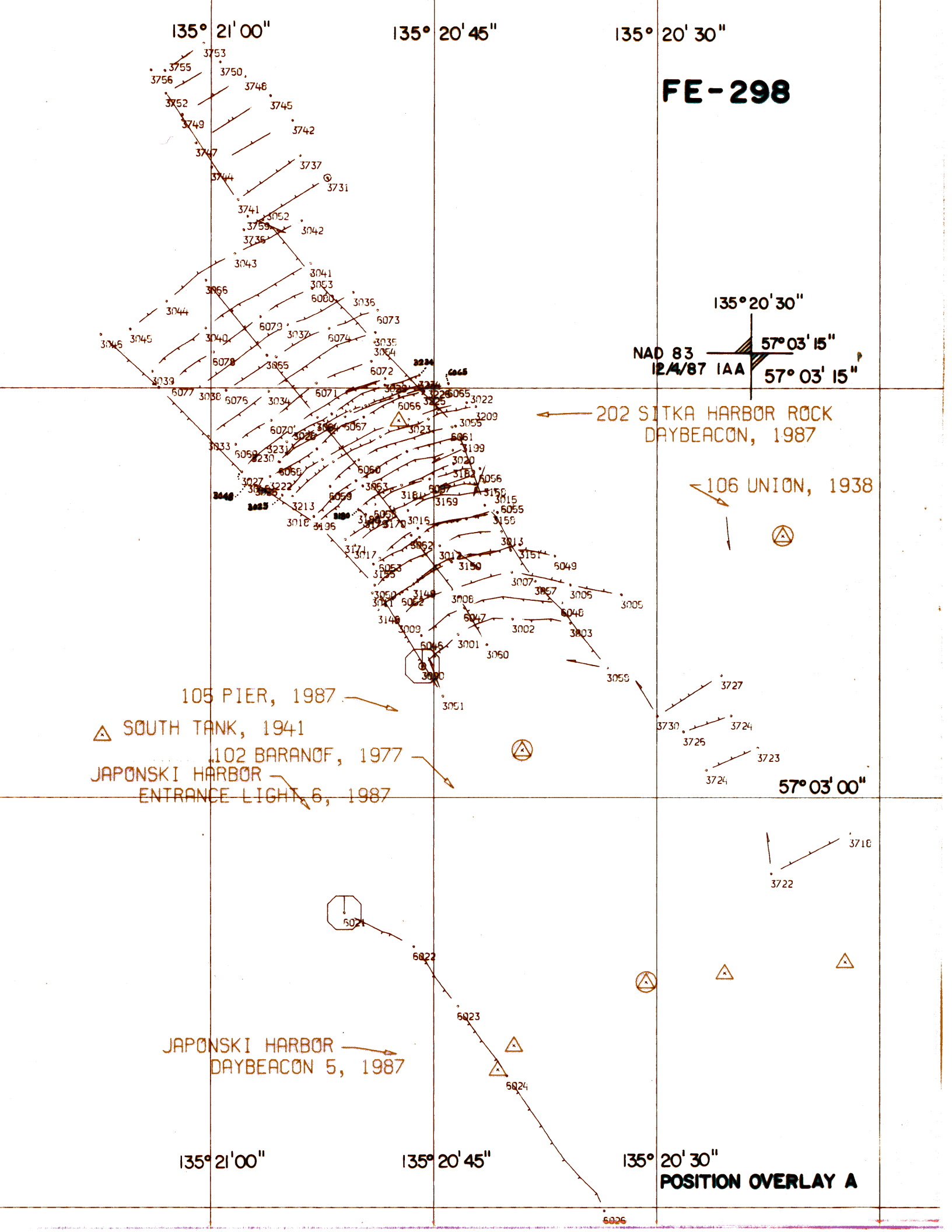
H-9316	1972	20000
H-9317	1972	20000
H-9318	1972	20000
H-9332	1972	10000
H-9333 (2 areas)	1972	10000
H-9343	1972	10000
H-9392	1973	10000
H-9393	1973	10000
H-9394	1973	10000
H-9407	1973	10000
H-9480	1974	20000
H-9481	1974	20000
H-9482A	1974	20000
H-9482B	1974	10000
H-9483	1974	10000
H-9638	1976	5000
FE No. 2 & 3, 1976	1976	2,500

GULF OF ALASKA

On Scales of
1:10000 6.34 inches = 1 statute mile
1:20000 3.17 inches = 1 statute mile

A-5324

(see also No. 110)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135° 20' 30"
FE-298
135°20'30"
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12/4/87 IAA
57°03'15"
57° 03' 15"
202 SITKA HARBOR ROCK DAYBEACON, 1987
106 UNION, 1938
105 PIER, 1987
SOUTH TANK, 1941
102 BARANOF, 1977
JAPONSKI HARBOR ENTRANCE LIGHT 6, 1987
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JAPONSKI HARBOR DAYBEACON 5, 1987
135° 21'00"
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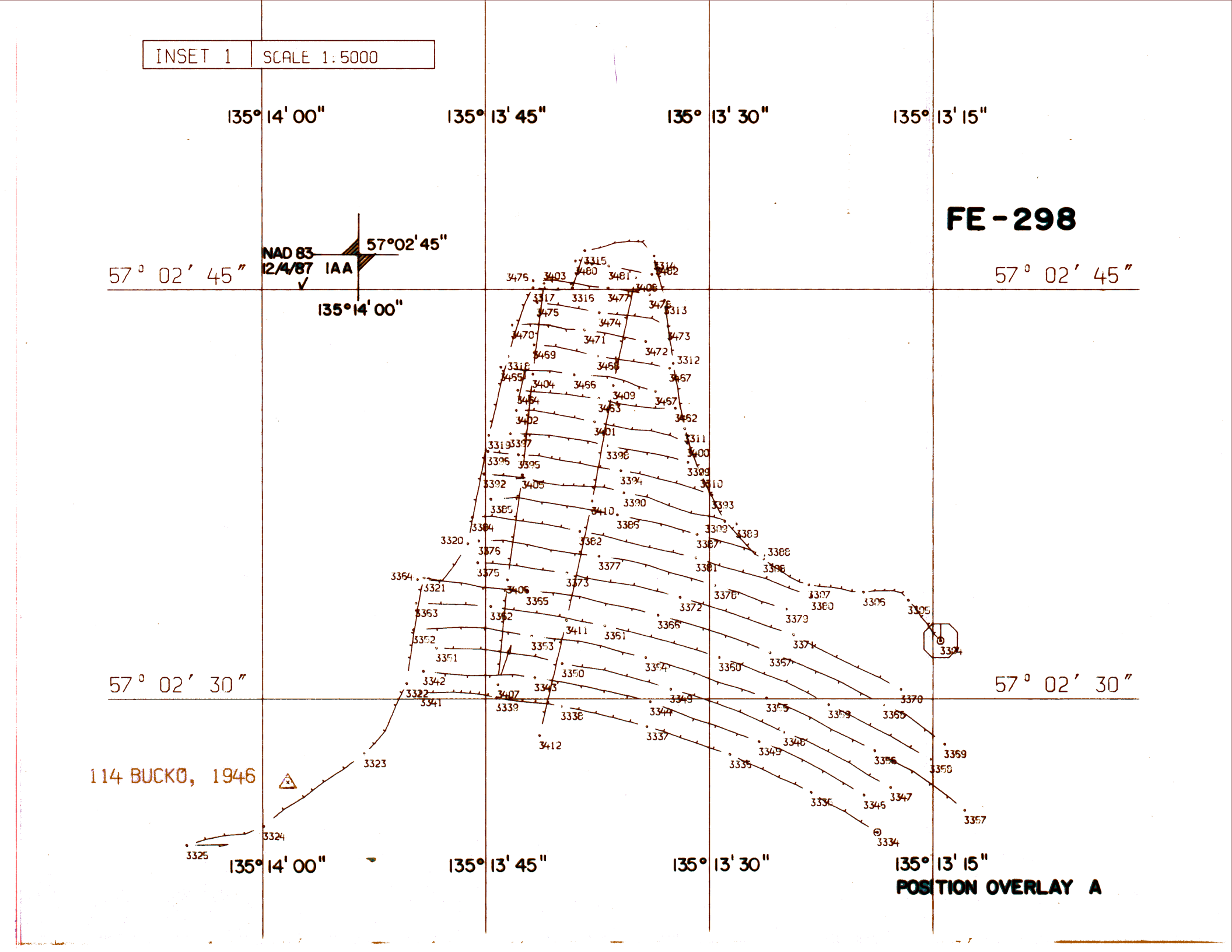
POSITION OVERLAY A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FE-298
NAD 83
12/4/87 IAA
57°02'45"
57° 02' 45"
135°14'00"
57° 02' 30"
114 BUCKO, 1946
POSITION OVERLAY A

135° 19' 45"

135° 19' 30"

135° 19' 15"

FE-298

57° 03' 15"

57° 03' 15"

135°20'00"

NAD 83

57°03'00"

57°03'00"

12/4/87 IAA

✓

3760

3763

3764

57° 03' 00"

135° 19' 45"

135° 19' 30"

135° 19' 15"

POSITION OVERLAY A

135° 21' 00"

135° 20' 45"

135° 20' 30"

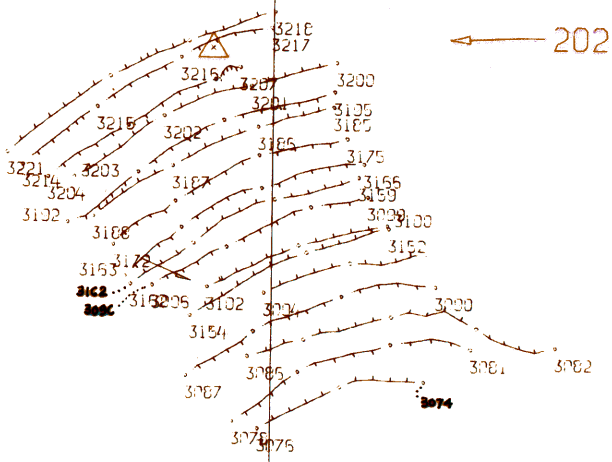
FE-298

135° 20' 30"

NAD 83
12/4/87 IAA

57° 03' 15"

57° 03' 15"



202 SITKA HARBOR ROCK
DAYBEACON, 1987

106 UNION, 1938

105 PIER, 1987

SOUTH TANK, 1941

102 BARANOF, 1977

JAPONSKI HARBOR
ENTRANCE LIGHT 6, 1987

57° 03' 00"

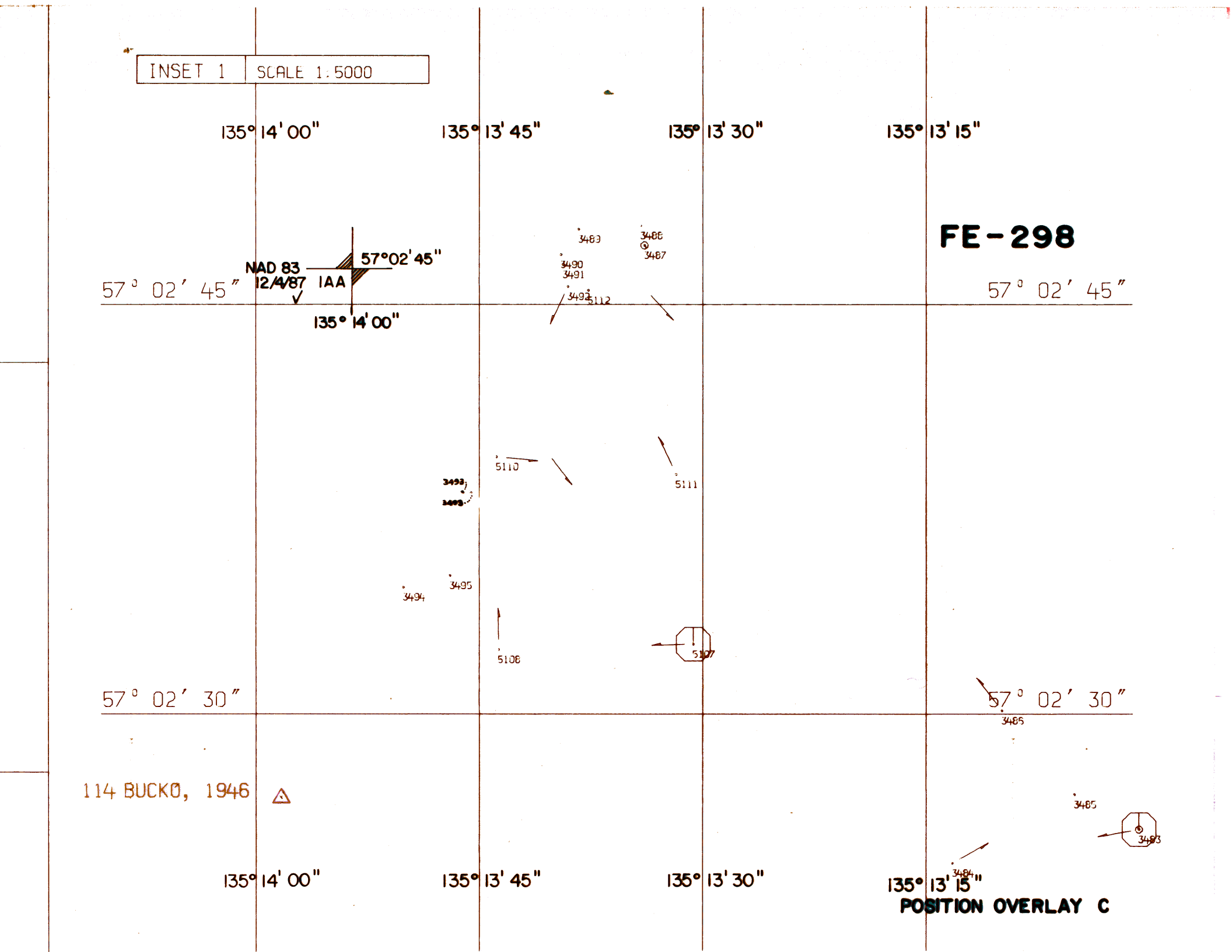
JAPONSKI HARBOR
DAYBEACON 5, 1987

135° 21' 00"

135° 20' 45"

135° 20' 30"

POSITION OVERLAY B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FE-298
57° 02' 45"
NAD 83
12/4/87
IAA
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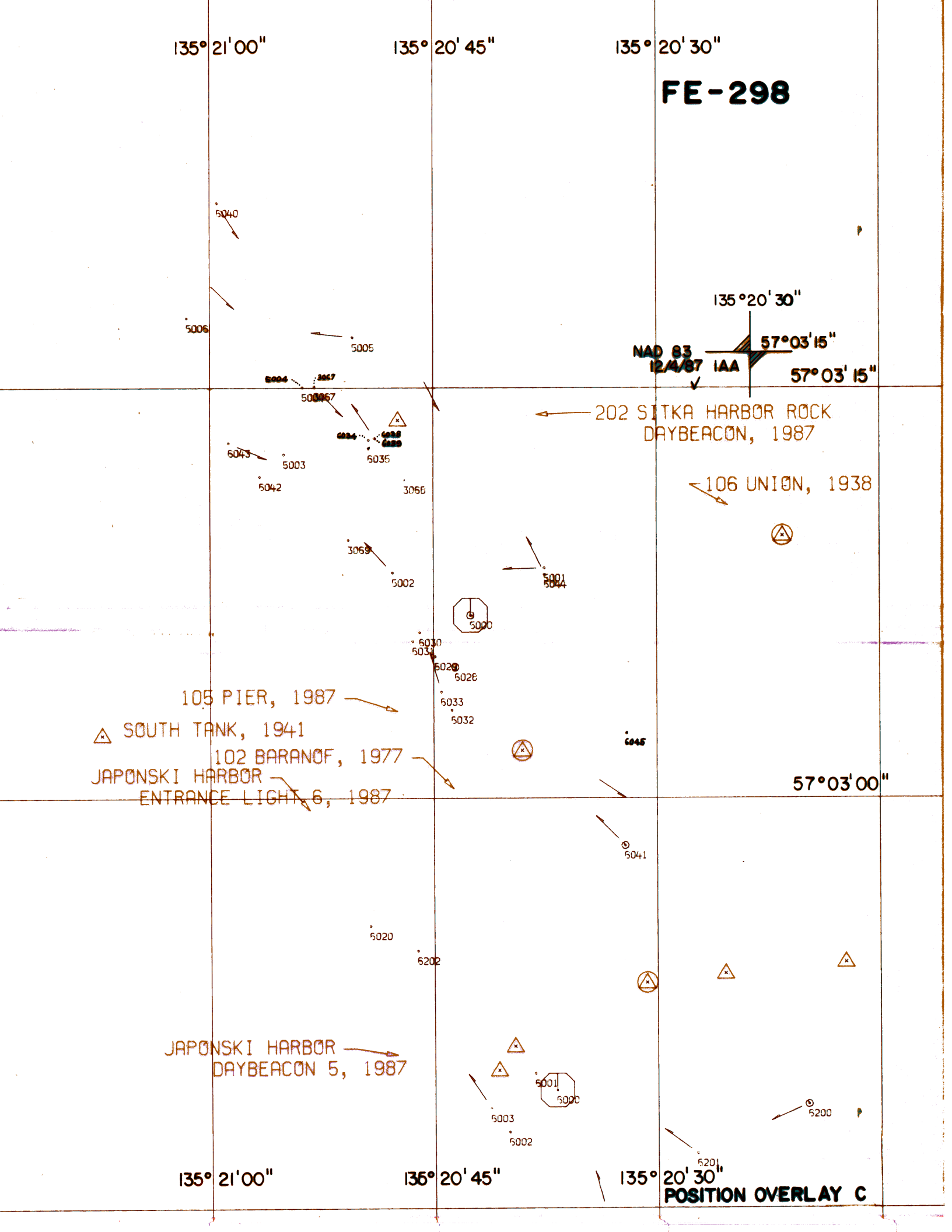
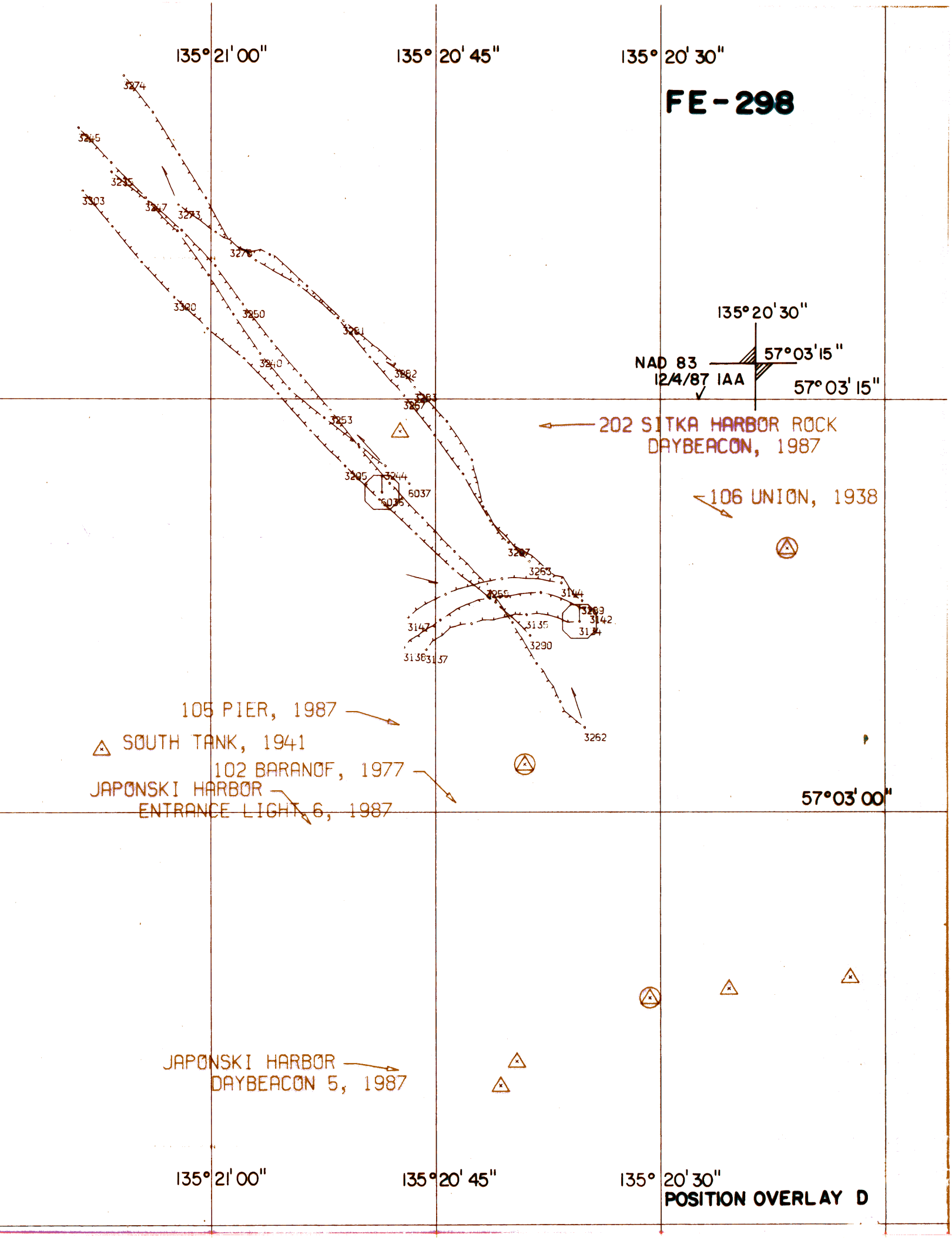
5110
5111
3493
3494
3495
5108
5107
57° 02' 30"
3486
114 BUCKO, 1946
3485
3483
3484
POSITION OVERLAY C


135° 21' 00"
135° 20' 45"
135° 20' 30"
FE-298
135°20'30"
NAD 83
12/4/87 IAA
57°03'15"
57°03'15"
202 SITKA HARBOR ROCK
DAYBEACON, 1987
106 UNION, 1938
105 PIER, 1987
SOUTH TANK, 1941
102 BARANOF, 1977
JAPONSKI HARBOR
ENTRANCE LIGHT 6, 1987
57°03'00"
JAPONSKI HARBOR
DAYBEACON 5, 1987
135° 21' 00"
135° 20' 45"
135° 20' 30"
POSITION OVERLAY C

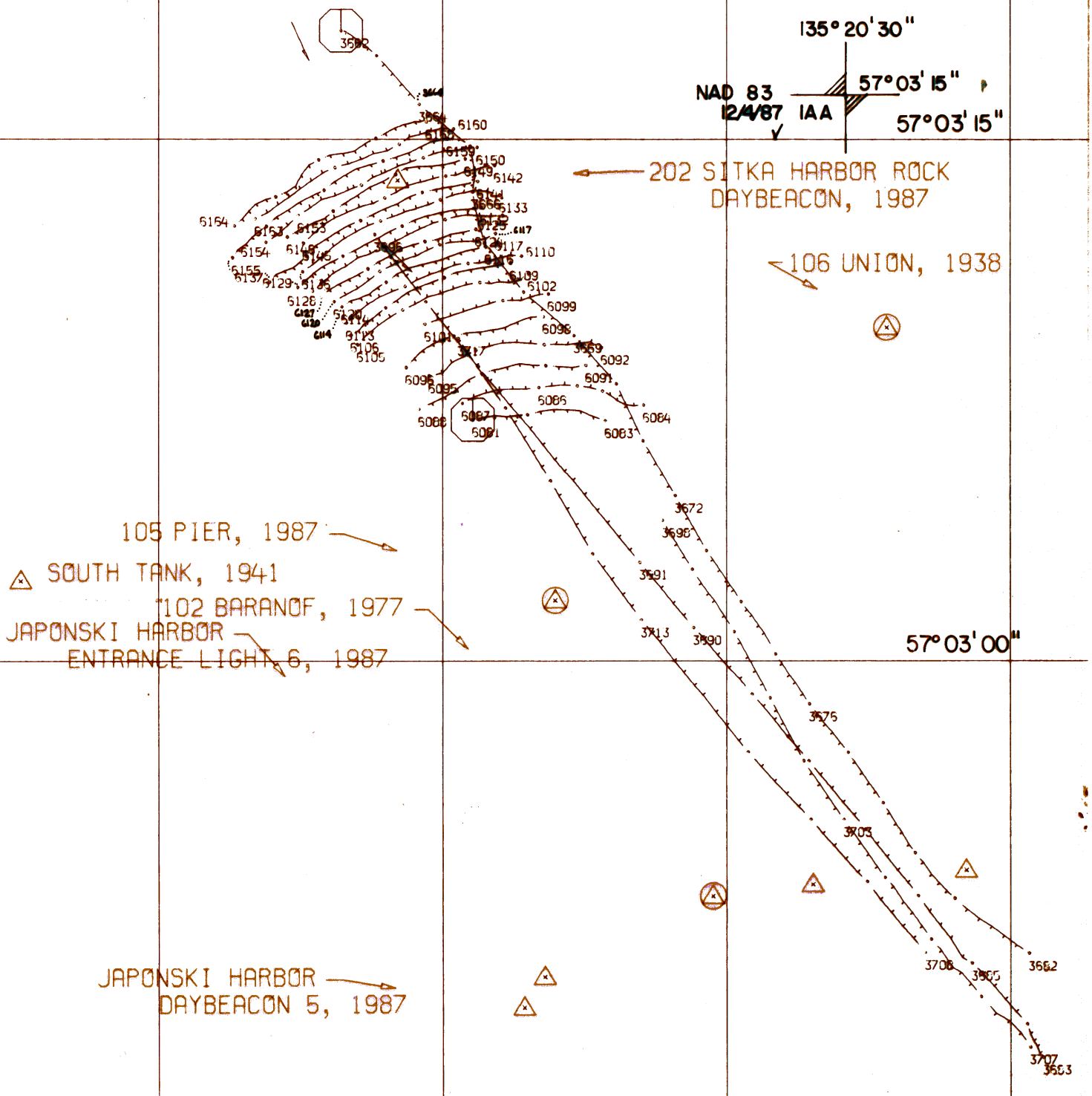

135° 21' 00"
135° 20' 45"
135° 20' 30"
FE-298
3274
3245
3235
3303
3247
3273
3276
3220
3250
3261
3240
3262
3257
3253
3205
3244
6037
6036
3207
3263
3255
3144
3269
3142
3147
3135
3290
3136
3137
3262
135° 20' 30"
NAD 83
12/4/87 IAA
57° 03' 15"
57° 03' 15"
202 SITKA HARBOR ROCK
DAYBEACON, 1987
106 UNION, 1938
105 PIER, 1987
SOUTH TANK, 1941
102 BARANOF, 1977
JAPONSKI HARBOR
ENTRANCE LIGHT 6, 1987
57° 03' 00"
JAPONSKI HARBOR
DAYBEACON 5, 1987
135° 21' 00"
135° 20' 45"
135° 20' 30"
POSITION OVERLAY D

135° 21' 00"

135° 20' 45"

135° 20' 30"

FE-298



135° 21' 00"

135° 20' 45"

135° 20' 30"

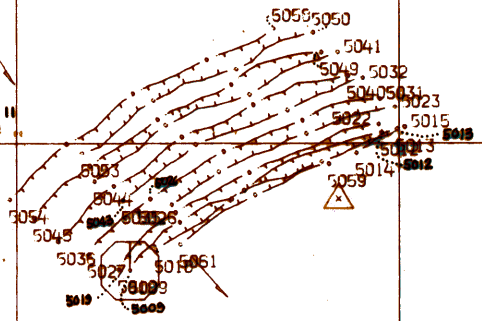
POSITION OVERLAY E

135° 21' 00"

135° 20' 45"

135° 20' 30"

FE-298



57° 03' 15"

135° 20' 30"

NAD 83
12/4/87 IAA

57° 03' 15"

57° 03' 15"

202 SITKA HARBOR ROCK
DAYBEACON, 1987

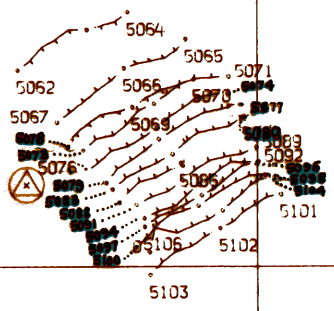
106 UNION, 1938

105 PIER, 1987

SOUTH TANK, 1941

102 BARANOF, 1977

JAPONSKI HARBOR
ENTRANCE LIGHT 6, 1987



57° 03' 00"

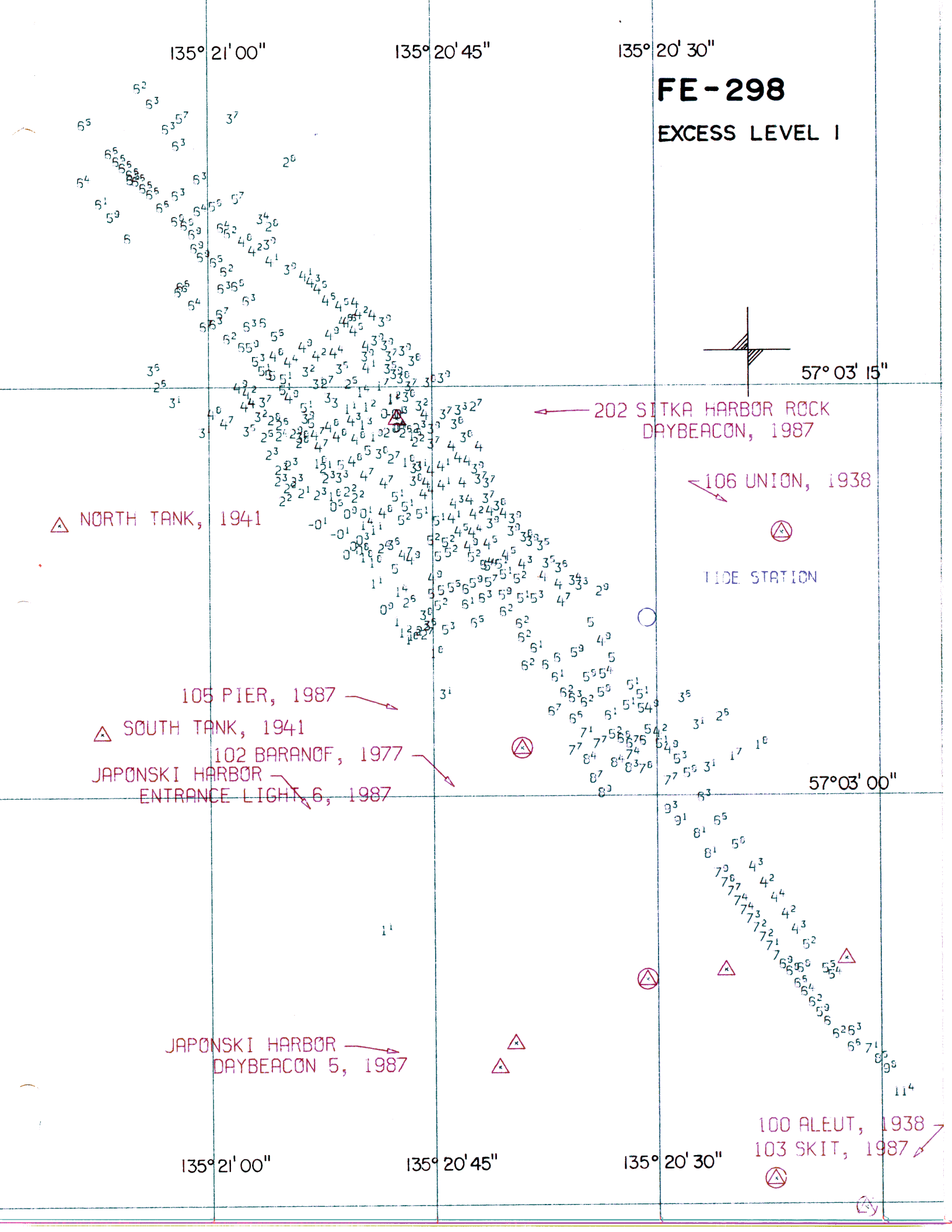
JAPONSKI HARBOR
DAYBEACON 5, 1987

135° 21' 00"

135° 20' 45"

135° 20' 30"

POSITION OVERLAY F


135° 21' 00"
135° 20' 45"
135° 20' 30"
FE-298
EXCESS LEVEL 1
57° 03' 15"
202 SITKA HARBOR ROCK DAYBEACON, 1987
106 UNION, 1938
NORTH TANK, 1941
TIDE STATION
105 PIER, 1987
SOUTH TANK, 1941
102 BARANOF, 1977
JAPONSKI HARBOR ENTRANCE LIGHT 6, 1987
57°03' 00"
JAPONSKI HARBOR DAYBEACON 5, 1987
100 ALEUT, 1938
103 SKIT, 1987
135° 21' 00"
135° 20' 45"
135° 20' 30"

INSET 1 | SCALE 1:5000

EXCESS LEVEL(S): 1

135° 14' 00"

135° 13' 45"

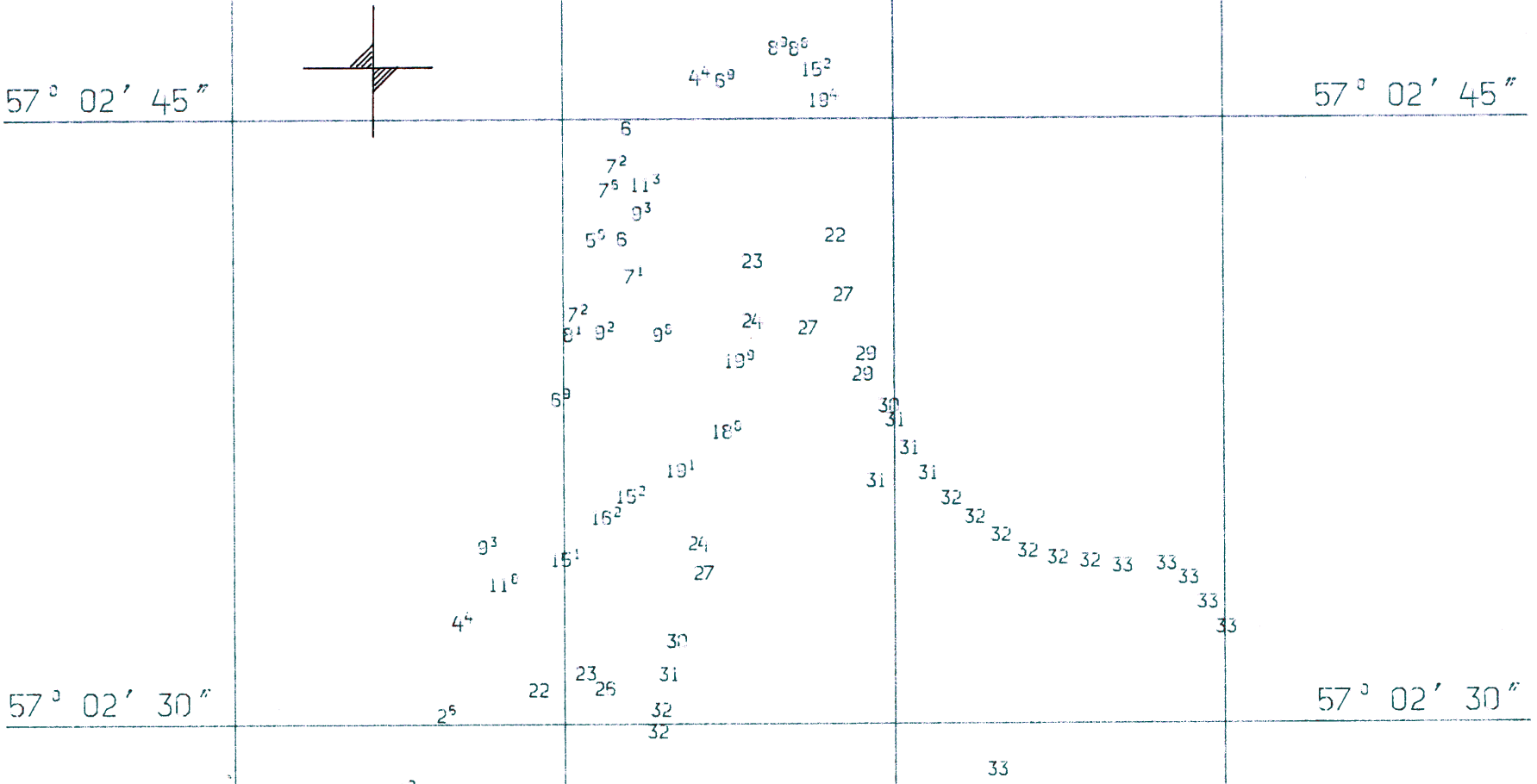
135° 13' 30"

135° 13' 15"

FE-298

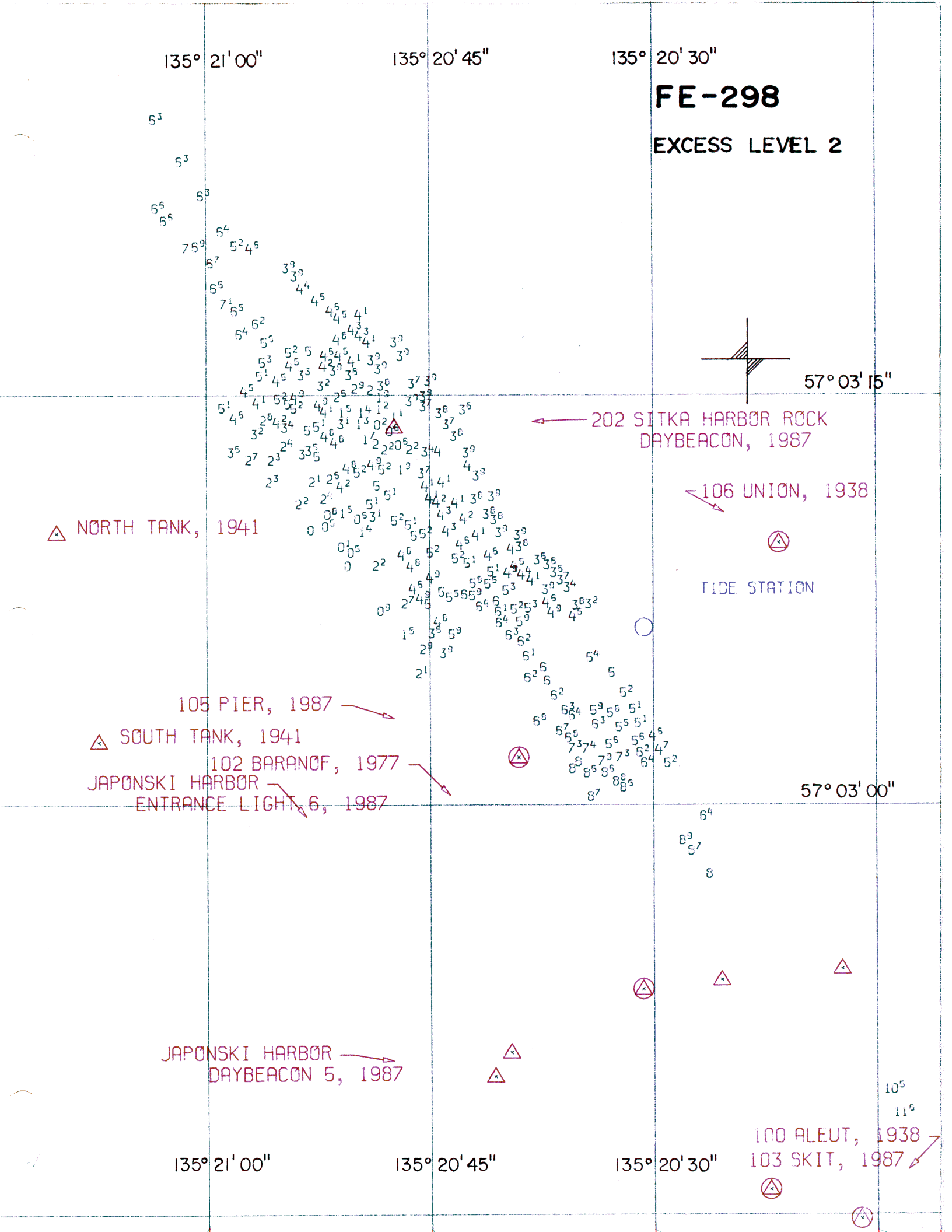
57° 02' 45"

57° 02' 30"



BUCKO, 1946

EXCESS LEVEL 1


135° 21' 00"
135° 20' 45"
135° 20' 30"
FE-298
EXCESS LEVEL 2
57° 03' 15"
202 SITKA HARBOR ROCK DAYBEACON, 1987
106 UNION, 1938
NORTH TANK, 1941
TIDE STATION
105 PIER, 1987
SOUTH TANK, 1941
102 BARANOF, 1977
JAPONSKI HARBOR ENTRANCE LIGHT 6, 1987
57° 03' 00"
JAPONSKI HARBOR DAYBEACON 5, 1987
100 ALEUT, 1938
103 SKIT, 1987
135° 21' 00"
135° 20' 45"
135° 20' 30"

INSET 1 | SCALE 1:5000

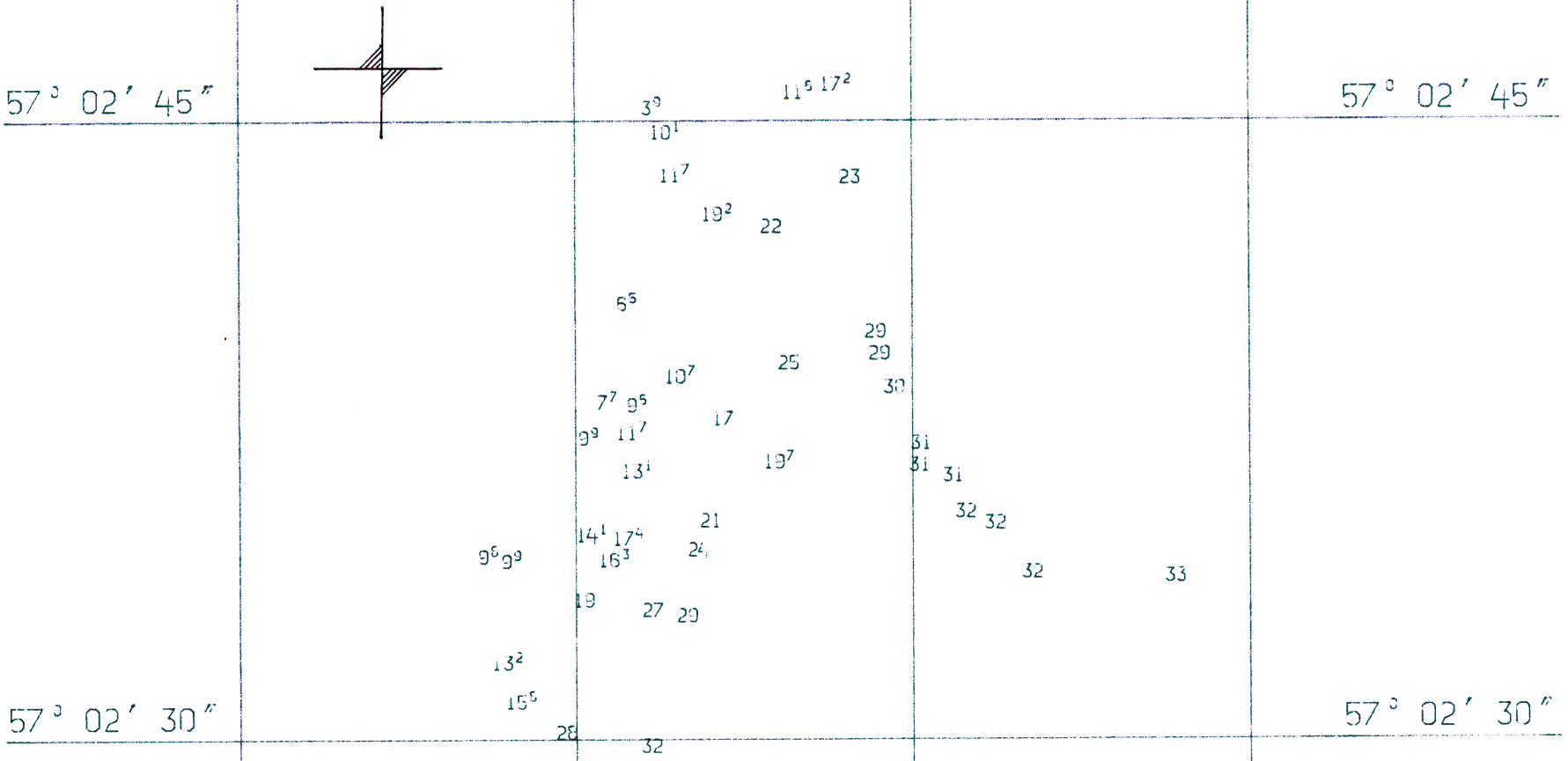
EXCESS LEVEL(S): 2

135° 14' 00" 135° 13' 45" 135° 13' 30" 135° 13' 15"

FE-298

57° 02' 45"

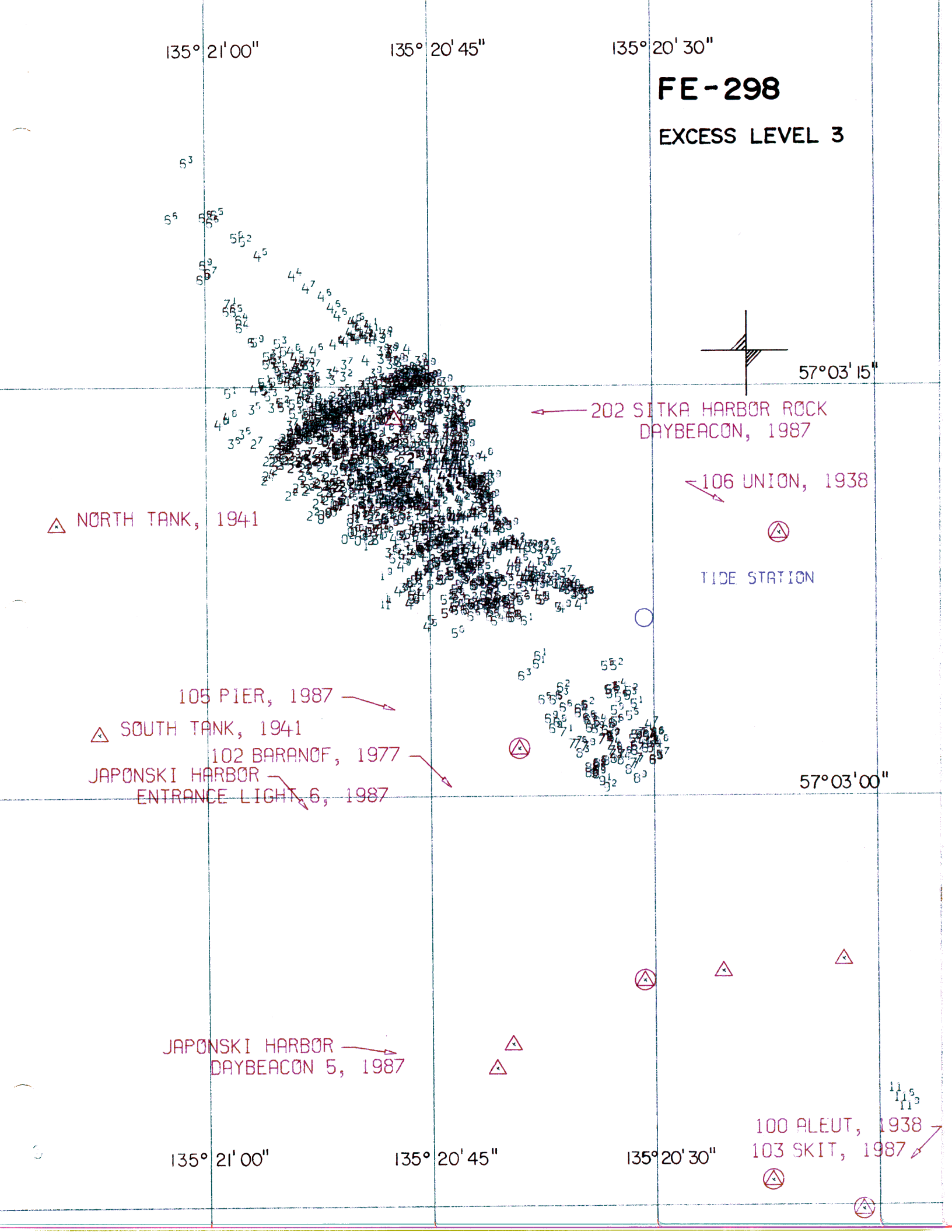
57° 02' 30"



114 BUCKO, 1946

135° 14' 00" 135° 13' 45" 135° 13' 30"

EXCESS LEVEL 2


135° 21' 00"
135° 20' 45"
135° 20' 30"
FE-298
EXCESS LEVEL 3
57° 03' 15"
202 SITKA HARBOR ROCK DAYBEACON, 1987
106 UNION, 1938
NORTH TANK, 1941
TIDE STATION
105 PIER, 1987
SOUTH TANK, 1941
102 BARANOF, 1977
JAPONSKI HARBOR ENTRANCE LIGHT 6, 1987
57° 03' 00"
JAPONSKI HARBOR DAYBEACON 5, 1987
100 ALEUT, 1938
103 SKIT, 1987
135° 21' 00"
135° 20' 45"
135° 20' 30"

INSET 1	SCALE 1:5000
EXCESS LEVEL(S):	3

135° 14' 00"

135° 13' 45"

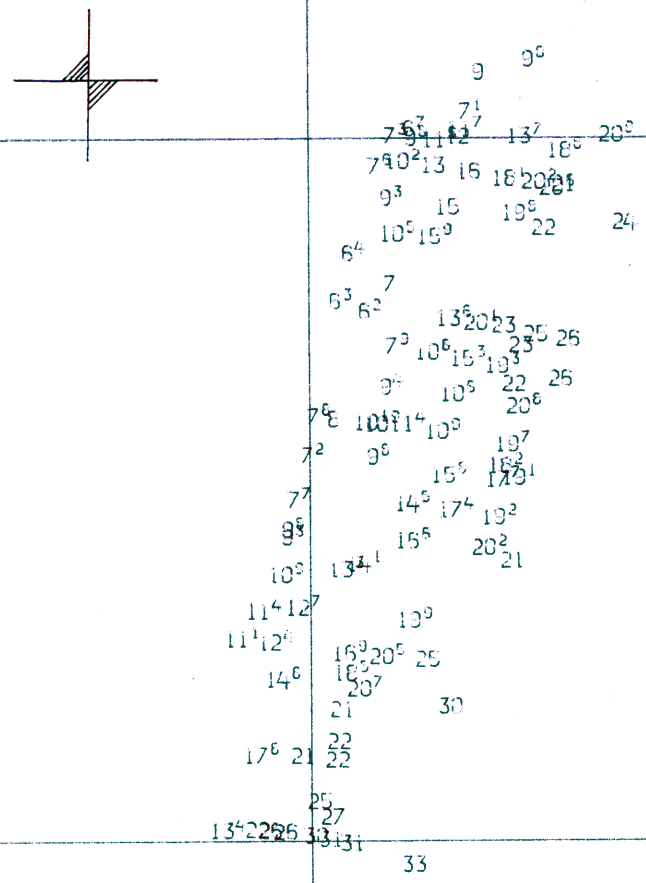
135° 13' 30"

135° 13' 15"

FE-298

57° 02' 45"

57° 02' 30"



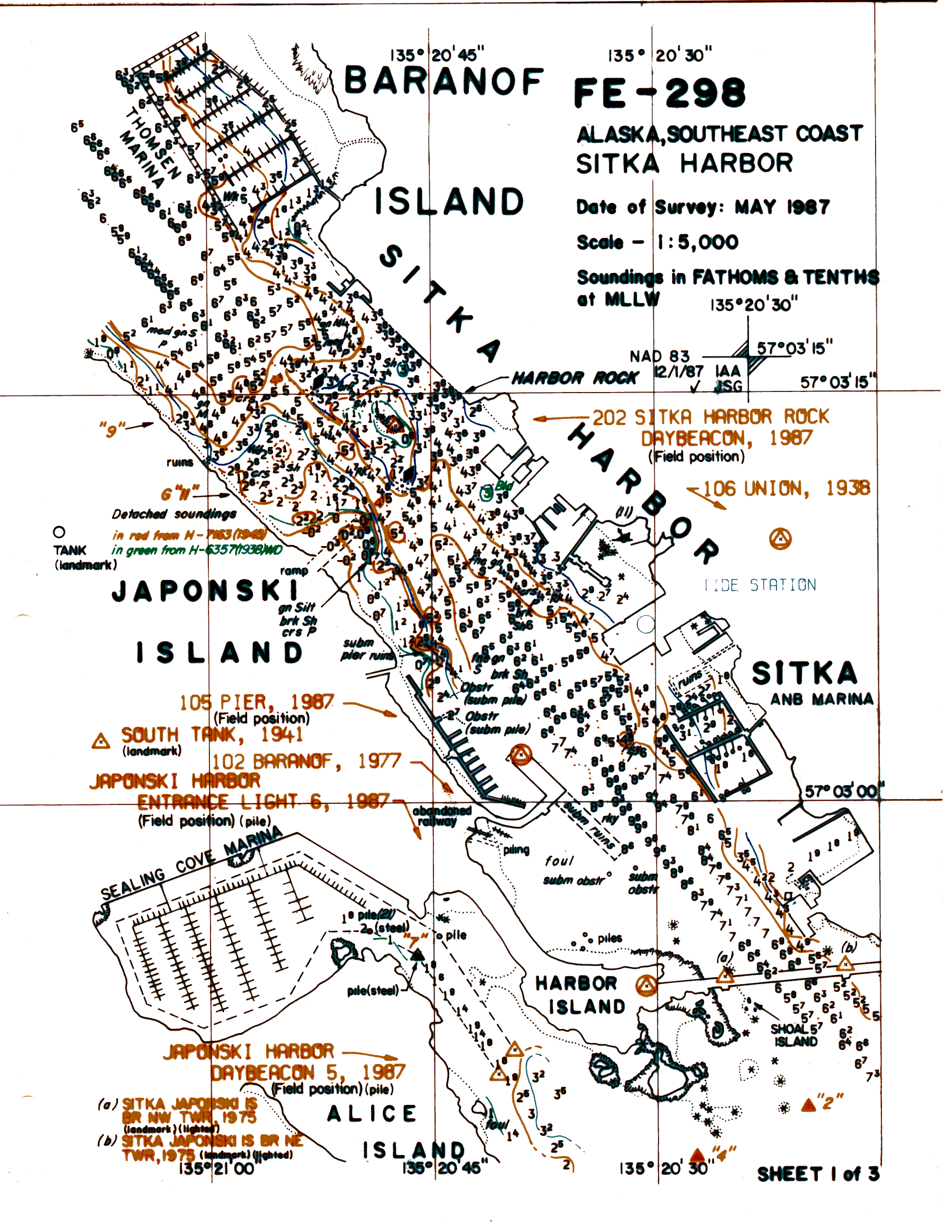
BUCKO, 1946

135° 14' 00"

135° 13' 45"

135° 13' 30"

EXCESS LEVEL 3


135° 20' 45"
135° 20' 30"
BARANOF
ISLAND
FE-298
ALASKA, SOUTHEAST COAST
SITKA HARBOR
Date of Survey: MAY 1987
Scale – 1:5,000
Soundings in FATHOMS & TENTHS at MLLW
135°20'30"
NAD 83
12/1/87 IAA
JSG
57°03'15"
57°03'15"
THOMSEN MARINA
SITKA HARBOR
HARBOR ROCK
202 SITKA HARBOR ROCK DAYBEACON, 1987
(Field position)
106 UNION, 1938
TIDE STATION
"9"
ruins
6"11"
Detached soundings
in red from H-7163(1949)
in green from H-6357(1938)WD
TANK
(landmark)
ramp
JAPONSKI
ISLAND
gn Silt
brk Sh
crs P
subm pier ruins
105 PIER, 1987
(Field position)
SOUTH TANK, 1941
(landmark)
102 BARANOF, 1977
JAPONSKI HARBOR
ENTRANCE LIGHT 6, 1987
(Field position) (pile)
abandoned railway
SITKA
ANB MARINA
Obstr (subm pile)
ruins
57°03'00"
SEALING COVE MARINA
piling
foul
subm obstr
subm ruins
rky
pile
piles
pile(steel)
"7"
HARBOR
ISLAND
SHOAL ISLAND
JAPONSKI HARBOR
DAYBEACON 5, 1987
(Field position) (pile)
(a) SITKA JAPONSKI IS BR NW TWR, 1975
(landmark) (lighted)
(b) SITKA JAPONSKI IS BR NE TWR, 1975 (landmark) (lighted)
ALICE
ISLAND
"2"
"4"
135° 21' 00
135° 20' 45"
135° 20' 30"
SHEET 1 of 3

135° 19' 45" 135° 19' 30" 135° 19' 15"

FE-298

ALASKA, SOUTHEAST COAST

SITKA HARBOR, CRESCENT BAY MARINA

Date of Survey: MAY 1987

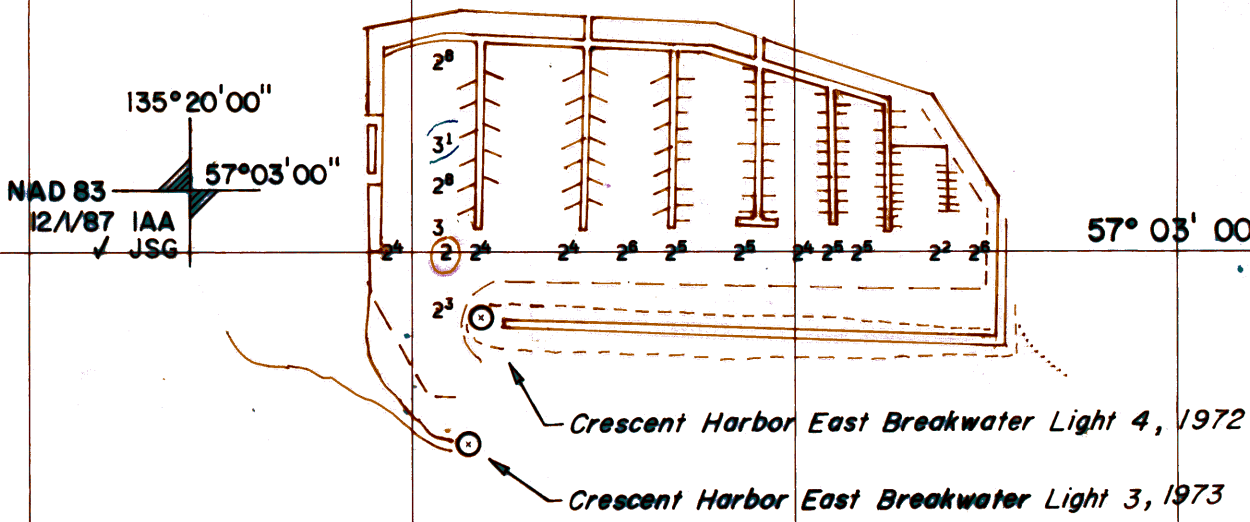
Scale – 1: 5,000

57°03' 15" 57° 03' 15"

Soundings in FATHOMS & TENTHS at MLLW

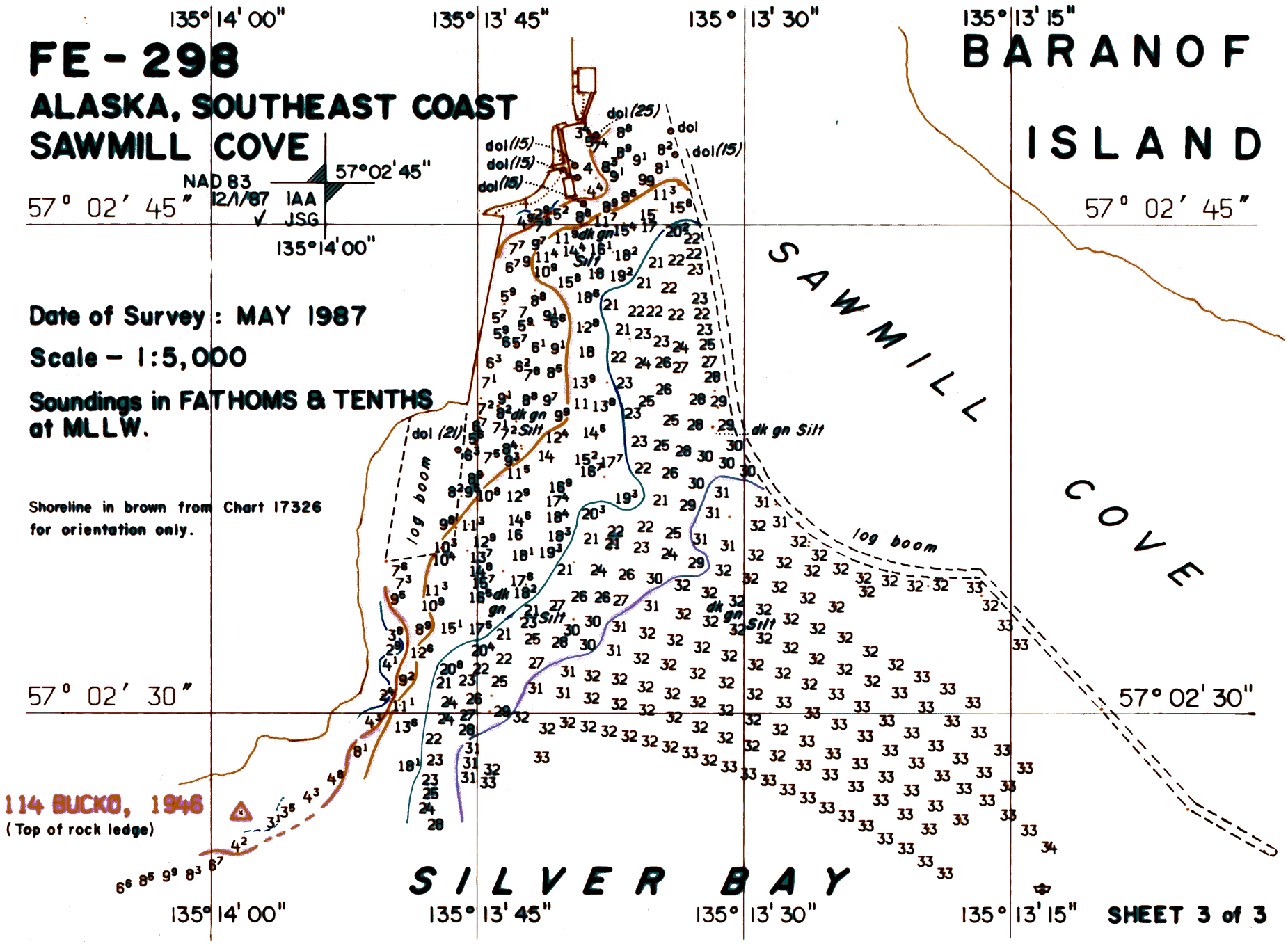
Shoreline in brown from Chart 17327 for orientation only.

CRESCENT BAY MARINA



135° 19' 45" 135° 19' 30" 135° 19' 15"

SHEET 2 of 3


135° 14' 00"
135° 13' 45"
135° 13' 30"
135° 13' 15"
FE - 298
ALASKA, SOUTHEAST COAST
SAWMILL COVE
NAD 83
12/1/87
IAA
JSG
57° 02' 45"
135° 14' 00"
Date of Survey : MAY 1987
Scale – 1:5,000
Soundings in FATHOMS & TENTHS at MLLW.
Shoreline in brown from Chart 17326 for orientation only.
BARANOF ISLAND
SAWMILL COVE
SILVER BAY
57° 02' 30"
dol (25)
dol (15)
dol (21)
dk gn Silt
log boom
114 BUCKO, 1946
(Top of rock ledge)
SHEET 3 of 3

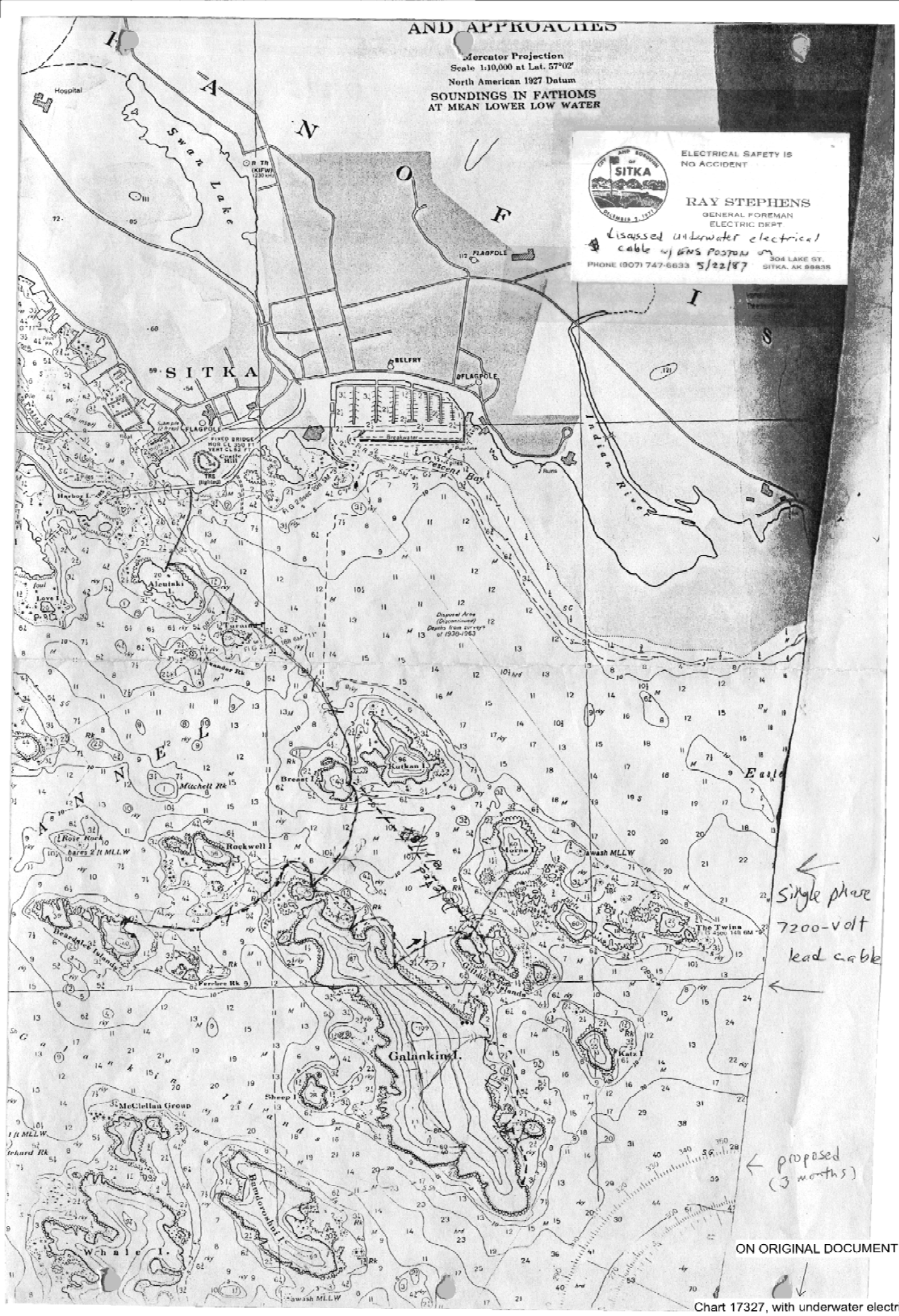
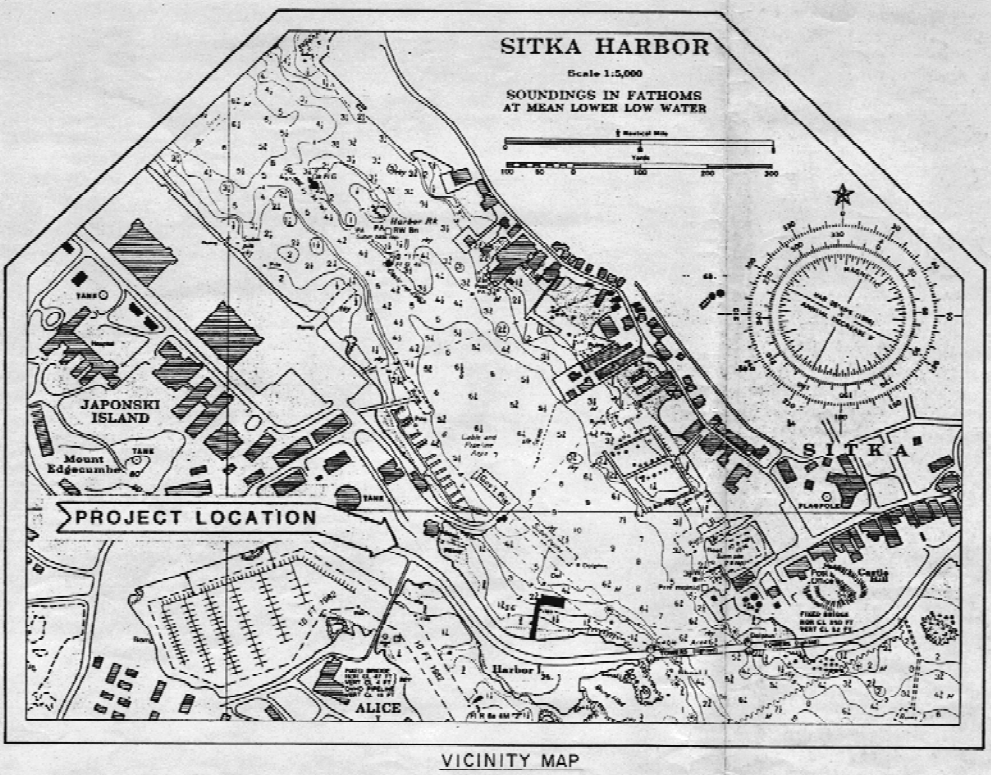


Chart 17327, with underwater electrical cables plotted. (See Section N of report.)

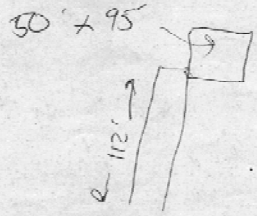


VICINITY MAP

Plans for new pier in Sitka Harbor.

(See Section P of report.)

ON ORIGINAL DOCUMENT



P-3

STEEL PILES
(SEE DETAILS SHT. 5)

50' x 95' WORK FLOAT
(SEE DETAILS SHT. 4 & 5)

P-4

P-2

N 347.8
E 917.1

P-1

6' x 65' STANDAND STATE
GANGWAY (SEE DETAILS SHT. 7 & 8)

10' x 20' RAMP
FLOAT (SEE DETAILS
SHT. 4 & 5)

P-5

P-6

10' x 112.5' PILE SUPPORTED
TIMBER DOCK (SEE DETAILS SHT. 6)

N 11° - 09' - 08" E

205.

TOP OF PROPOSED
FILL (SEE DETAILS SHT. 3)

N 157.4
E 879.6

N 146.6
E 877.4

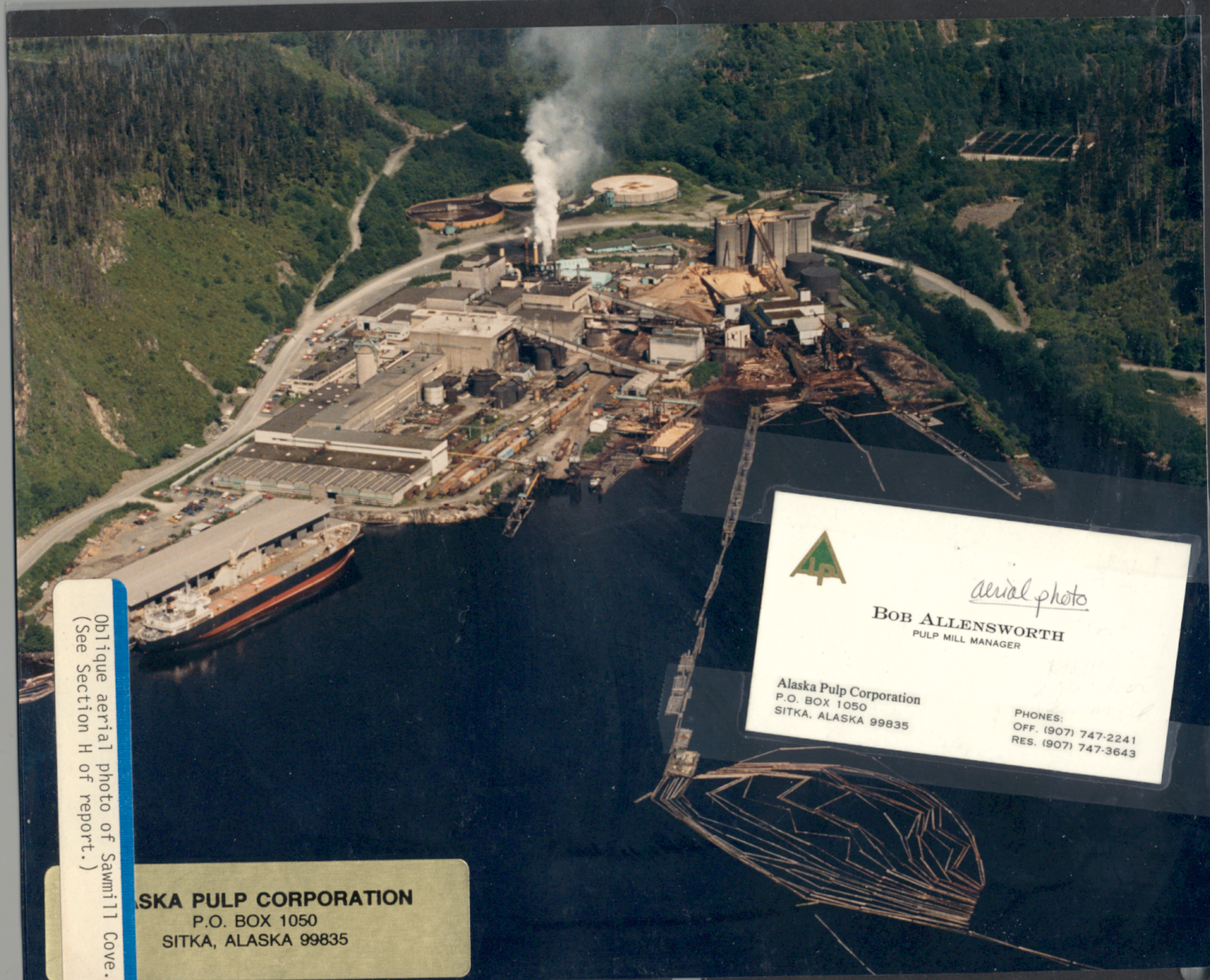
SEE NOTE 4 & 5

R/W

5' SIDEWALK

CITY

FISHERM



aerial photo

BOB ALLENSWORTH
PULP MILL MANAGER

Alaska Pulp Corporation
P.O. BOX 1050
SITKA, ALASKA 99835

PHONES:
OFF. (907) 747-2241
RES. (907) 747-3643

ASKA PULP CORPORATION
P.O. BOX 1050
SITKA, ALASKA 99835

Oblique aerial photo of Sawmill Cove.
(See Section H of report.)

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-298

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

EXAMINED FOR NM
GDBU
9-25-89 RE

CHART	DATE	CARTOGRAPHER	REMARKS
17327	9/28/88	Charles E James	~~Full~~ Part ~~Before~~ After ~~Marine~~ Center Approval Signed Via
			Drawing No. 13 critical corr's only
17326	9/28/88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 16 critical corr's only
17324	9/28/88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 8 critical corr's only
17320	9/28/88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via
~~17327~~			Drawing No. 33 critical corr's only
17327	10/18/88	Ernest V. Monti	~~Full Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 15 in Fall
17324	10/19/88	Ernest V. Monti	~~Full Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 13 (in Fall)
17326	10/28/88	Pearce Hunt	Full ~~Part Before After~~ Marine Center Approval Signed Via
			Drawing No.
17320	11/2/90	Dan Clark	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 24 APP'D THRU 17324 + 17326
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.